PaperVision® Enterprise

Administration and System Architecture Reference Guide

PaperVision Enterprise Release 77

January 2014

DIGITECH
SYSTEMS

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Chapter 1 – Introduction

PaperVision Enterprise represents a new breed of software for managing corporate information of any kind and the flow of that information within your organization. What is unique about PaperVision Enterprise is that it was designed to provide full features and functionality for any number of users; from the single user workstation to (literally) an unlimited number of users. Now, that's a bold statement – Unlimited Scalability. When was the last time you heard that about any software product? This is not a claim we take lightly. Digitech Systems has provided document management and high-volume image capture applications for a number of years. In addition to providing software, Digitech Systems offers an on-demand (SaaS) service, known as ImageSilo®. Being an on-demand provider requires a great amount of expertise in offering scalable systems, unparalleled security, and high-availability.

Digitech Systems has taken the expertise gained as an on-demand provider and used that experience to design PaperVision Enterprise. In addition to standard features and functionality, there were three additional areas that were focused on:

- Scalability
- Reliability
- Security

The manner in which PaperVision Enterprise addresses these issues is explained in detail in **Appendix B – Ensuring Scalability, Reliability, and Security**.

> **IMPORTANT!**
>
> To support the ISO 8601 international date format, many functions in PaperVision Enterprise may now display dates and times using the "yyyy-mm-dd hh:nn:ss" format.

Licensing

As stated in your End-User License Agreement, PaperVision Enterprise is licensed per-concurrent user. This allows you the greatest flexibility in licensing as a license is only used when a user is logged into the system (no licenses are used for administration). If all of the licenses are in use, the user will be prompted that there are no licenses available for their session. If you are hosting PaperVision Enterprise for multiple entities (such as in an on-demand model) it is important to keep in mind that concurrent licenses (either individual, in groups, or unlimited) are assigned to a specific entity.

- PaperVision® Enterprise WorkFlow is licensed on a per-entity basis. An unlimited license allows an unlimited number of users for a single entity (of course, still limited to the number of concurrent PaperVision licenses) to access WorkFlow functionality. If concurrent WorkFlow licenses are purchased, any user who logs into PaperVision Enterprise who has access to WorkFlow functionality (that is, they are a member of a group that is a WorkFlow participant) will be required to have both a WorkFlow license as well as a PaperVision license available in order to login.
- PaperVision® Enterprise Report Management is licensed on a per-entity basis. This allows an unlimited number of report management jobs to be defined and processed for a single entity.
- PaperVision® Distribution Assistant is licensed once for a single database (unlimited entities). PaperVision Distribution Assistant provides an application that is automatically placed on migrated data groups to facilitate easy retrieval (view and print) of documents from those data groups.
- PaperVision® Tools is suite of tools which integrate PaperVision functionality into third-party applications. PaperVision Tools is licensed as a component of PaperVision Enterprise. Users with current PaperVision Enterprise maintenance contracts, may install and use PaperVision Tools.
- PaperVision® Message Manager is comprised of the PaperVision Message Capture Server and PaperVision Message Capture Harvester components. PaperVision Message Manager is an included component of PaperVision Enterprise.
- Web servers, application servers, and automation servers are all included with the standard PaperVision Enterprise concurrent licenses. You can install an unlimited number of these servers, for even a single concurrent license.

System Requirements

The following table outlines the minimum system requirements for PaperVision Enterprise and its optional components.

Minimum System Requirements	
Operating Systems	Windows XP Pro SP3 or later (both 32- and 64-bit operating systems supported) required for the following components: • PaperVision Administration Console • PaperVision Enterprise • PaperVision Automation Service (not required) • PaperVision.net Enterprise Browser Plug-Ins (not required)* • PaperVision Web/Application or Authentication Gateway Server (not required)* * Both components require Internet Information Server (IIS) 5.0 or later
Hard Disk Space	250 MB
.NET Framework	Version 4.0
Windows Installer	Version 4.5 or later
Windows PowerShell	Version 1.0 or later
Microsoft® SQL Server®	SQL Server 2005 or later **Note**: Optionally, you can install Microsoft SQL Server 2008 R2 Express Edition if you are installing PaperVision Enterprise from the DVD.
Internet Browser	Internet Explorer® 8 or later (PaperVision ActiveX Viewer and Browser-Based Viewer) Mozilla Firefox® 3.6 or later (Browser-Based Viewer) Google Chrome ™ (Browser-Based Viewer) Safari® on iPad devices and Macs (Browser-Based Viewer)
Screen Resolution	SVGA Monitor (1024 x 768 or higher recommended)

Minimum Hardware Requirements

Gone are the days of "minimum hardware configurations" as most enterprise software is capable of operating on the base hardware configurations (i.e. a current processor and 4 GB of memory for desktops and 8 GB of memory for servers).

However, each organization and their intended use of PaperVision is unique. Your intended workload (max number of users, quantity, and types of operations performed within a specific periodicity, etc.) coupled with your security and redundancy requirements will dictate the hardware requirements for your implementation. PaperVision has the distinct capability of being able to scale both up and out. Most of the functions performed by PaperVision can be configured to take advantage of powerful hardware configurations, such as those with many processor cores and hundreds of GB of memory (scaling up). Additionally, PaperVision has the capability to spread its processing requirements across numerous computers (scaling out).

PaperVision products are designed and tested for specific operating systems, not hardware environments. Numerous customers successfully run PaperVision in virtual environments, including VMWare and Microsoft’s Hyper-V. While this technology has matured over the years, we have seen issues with common software (other than PaperVision) not operating properly or efficiently because of the virtualized environment. In the cases that we have witnessed, the issue was with the virtual environment, not the software product. If our technical support believes that the hardware environment (including virtualized environments) is contributing to an operational or performance issue, they may request that you assess that the issue under a different (or non-virtualized) environment.

If you do intend to use a virtualized environment for your PaperVision implementation, be sure to carefully consider the implications of running in a shared environment. Remember, you are not just sharing processors and memory; you are also sharing network and disk resources with the other virtualized environments on the same hardware.

Installation and Configuration

The accompanying **PaperVision Enterprise Installation and Getting Started Guide** provides comprehensive documentation on installing and configuring both PaperVision Enterprise and the PaperVision Authentication Gateway.

PaperVision Enterprise Terminology

To fully understand PaperVision Enterprise, the following key terms are used throughout the application.

Entity

An entity is a body such as a corporation or organization. Each entity is autonomous and administers its own projects, users, groups, WorkFlows, security policies, etc. An entity never shares elements with other entities, and you cannot switch between entity IDs after

you log in. You or your administrator can limit access to specific projects, functionality, and documents within your entity.

In general, most users (including users in large enterprise installations) use only a single entity. Only a few special circumstances require more than one entity:

For example, you might see more than one entity in a hosting environment where an on-demand provider is hosting data for multiple companies and each company wants to be able to administrate itself and its users. You might also see more than one entity in a large enterprise consisting of different departments that want the ability to administrate themselves separately from other departments without involving a central IT organization.

Entity ID

An entity ID is a unique number that identifies each entity. Each entity is autonomous; you cannot change your entity ID after you log in and cannot work across entities.

Project

A project is a logical grouping of documents based on a common indexing schema. For example, ABC Company has three projects: Human Resources, Accounts Receivable, and Sales.

- The Human Resources project contains Human Resources records, such as employee records and health insurance information.
- The Accounts Receivable project contains billing, purchase order, and invoice information.
- The Sales project contains prospect and client information.

Each of these projects is a separate logical grouping within the ABC Company entity. Projects support up to 200 named index fields. Project names must be unique within an entity, but you can create an unlimited number of projects.

Data Group

A data group is a set of documents and their index values. A data group can contain one or more documents, and those documents can be grouped into one or many projects. A data group holds information for only a single client, but it can contain an unlimited number of projects. Typically, a data group only contains documents for one project, as this makes organization easier.

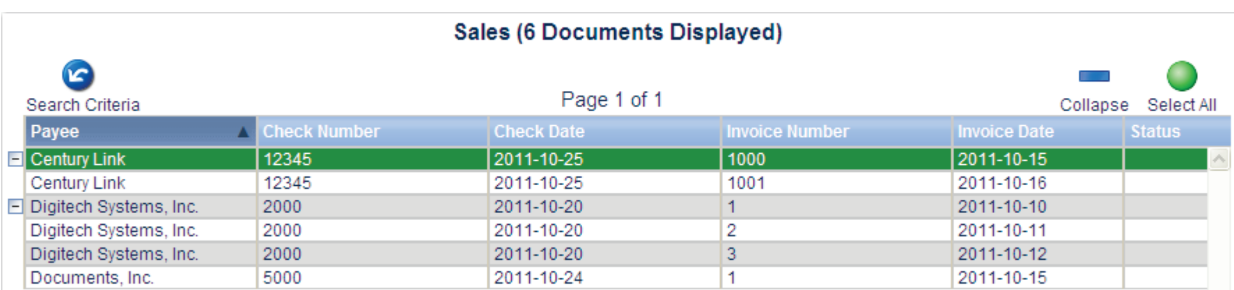
Index Values

Document index fields contain values that enable you to identify key elements of documents within a project during the capture process. You then use these index field values to search for and retrieve documents in PaperVision Enterprise. When you enter an index value to perform a search for a document, the application compares the value you entered against your database tables and retrieves documents that meet your specific criteria.

Detail Sets

Detail sets (also referred to as "duplicate documents") define a collection of index values that allow multiple sets of field data to reference a single document. If documents with detail sets appear in a search results screen in the PaperVision Enterprise Web Client, they display with a plus sign, allowing users to expand all documents contained in the detail set. Detail sets can be created in PaperFlow™, PaperVision Capture, PaperVision Message Manager, and PaperVision Enterprise Report Management.

The example below illustrates a search results screen with detail sets that have been expanded to show the documents' related Check Number, Check Date, and Payee index values. The Invoice Number and Invoice Date detail sets vary across documents.



Payee	Check Number	Check Date	Invoice Number	Invoice Date	Status
Century Link	12345	2011-10-25	1000	2011-10-15	
Century Link	12345	2011-10-25	1001	2011-10-16	
Digitech Systems, Inc.	2000	2011-10-20	1	2011-10-10	
Digitech Systems, Inc.	2000	2011-10-20	2	2011-10-11	
Digitech Systems, Inc.	2000	2011-10-20	3	2011-10-12	
Documents, Inc.	5000	2011-10-24	1	2011-10-15	

Detail Sets

Documents

Documents contain the individual pages or images for a given set of index values. When document grouping is enabled in **System Settings > User Options**, documents are grouped per page results. By default, 100 documents appear per page of search results in PaperVision Enterprise.

Using the Administration Console

The PaperVision Administration Console provides a single point of administration for everything related to PaperVision Enterprise, including WorkFlow configuration. The tool can manage an unlimited number of entities from a single sign-on. Only global administrators, system administrators, and WorkFlow administrators can log into the administration console.

Administrators

The PaperVision Enterprise Administration Console supports three types of administrators:

Global Administrators

Global administrators can control every aspect of configuration for the PaperVision Enterprise system, including configurations for all entities. However, they cannot access the documents in a project, as a system (entity) administrator can. Global administration is only performed in the PaperVision Enterprise Administration Console application.

System Administrators

System administrators can completely administrate a single entity and have access to all functionality in all projects for that entity. However, system administrators cannot assign the entity's data group, full-text, migration and batch paths, for example, that a global administrator can assign.

WorkFlow Administrators

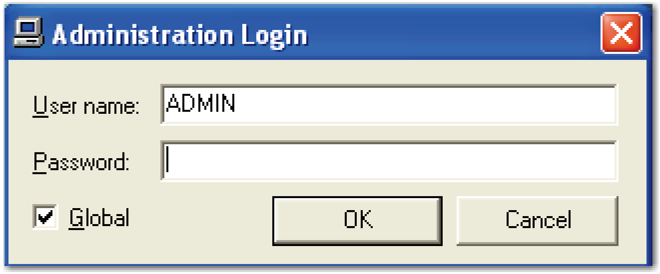
WorkFlow administrators are able to design and configure WorkFlows within an entity. They can configure WorkFlow definitions for any project and view WorkFlow history and WorkFlow status reports, but they have no access to documents or functions in any projects unless a system administrator explicitly grants them access. If they do have access to view documents within a project, WorkFlow administrators can create WorkFlow instances for a particular document and view its WorkFlow status.

Capture Administrators

Capture administrators can define Capture Jobs for use with the PaperVision Capture product. Capture administrators have no administrative capabilities in PaperVision Enterprise.

Logging into the Administration Console

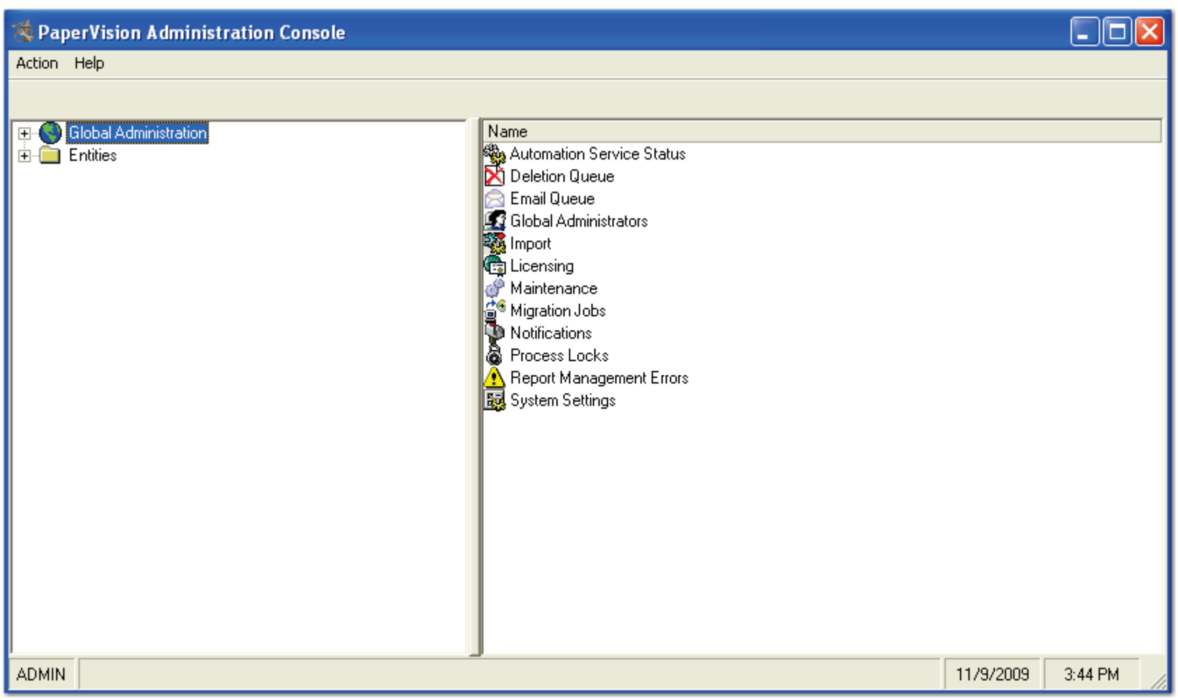
When the administration console is started, you will be prompted to log into the system.



Administration Login

If this is your first time logging in, the user name is ADMIN and the password is ADMIN. Checking the Global checkbox determines whether you are logging in as a Global Administrator or an Entity Administrator. Initially, go ahead and log in as a Global Administrator.

Once you have logged into the administration console, the main Administration Console screen appears.



PaperVision Administration Console

> **Tip:**
>
> In addition to the toolbar commands and menu options available for each Administration Console screen, you can also right-click on the appropriate node and select the operation from the context menu.

Obtaining Online Help

To obtain help from any page within PaperVision Enterprise, click the **Help** button or press the **F2** key to open a topic related to the screen you are currently viewing. Additionally, every screen in PaperVision Enterprise contains the **Help** menu, which contains the following items:

- **Help** > **Help Topics** opens the Online Help file.
- **Help** > **User's Manual** opens a PDF of the PaperVision Enterprise User Guide.
- **Help** > **About PaperVision Enterprise** displays a splash screen with the copyright and version information for your version of PaperVision Enterprise.

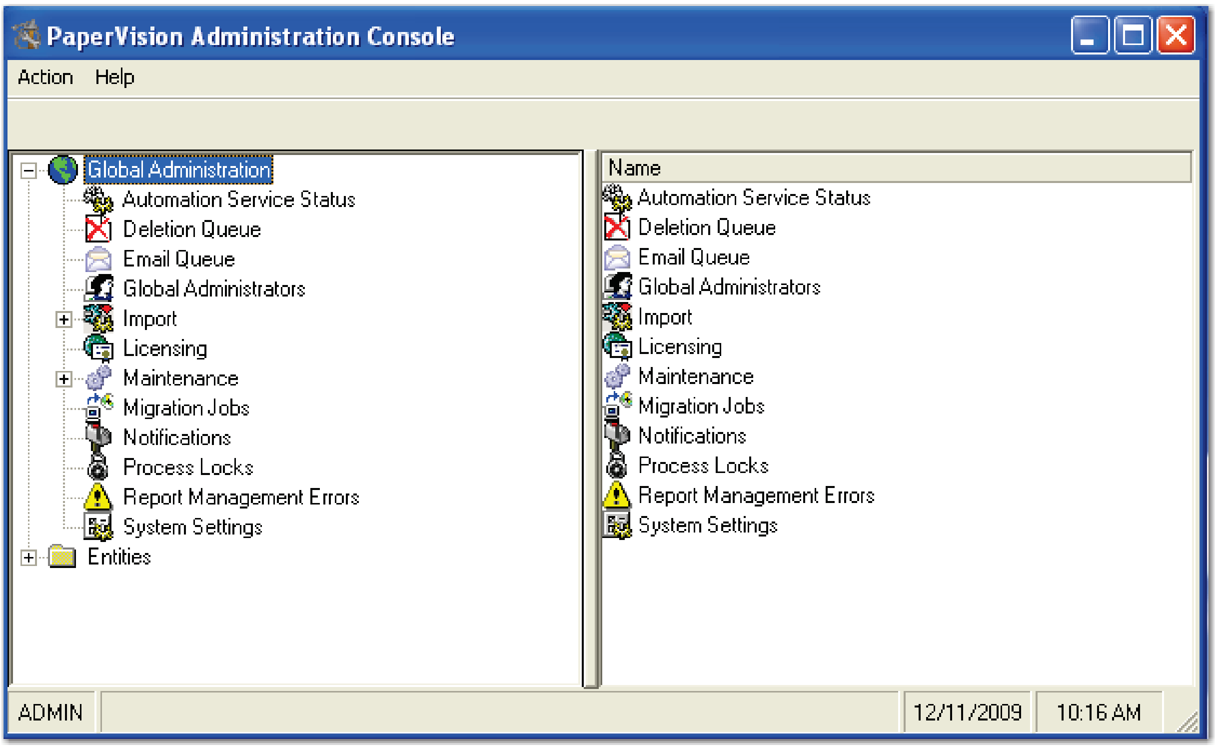
Logging Out

It is recommended to log out of PaperVision Enterprise once you are finished with your current session. To log out of the application, click the **Logout** icon, and then click **OK**. The system displays the **Login** prompt once again.

Chapter 2 – Global Administration

Global administration functions encompass functionality that affect the PaperVision Enterprise system as a whole – separate from individual entities. All global administration can only be performed by a global administrator.

To view the global administration settings, log into the PaperVision Enterprise Administration Console with the appropriate global administrator credentials, and select the **Global** check box. Once logged in as a global administrator, you can view global administration settings for all entities. To view the global administration settings in the Administration Console, expand the **Global Administration** directory.



Global Administration

The following global administration settings can be configured in PaperVision Enterprise:

- **Automation Service Status** displays the current status of all automation servers connected to the PaperVision Enterprise database.
- **Deletion Queue** provides a list of directories that have been submitted to be deleted (based on the purging of a data group) and have not yet been processed by the automation service.
- **Email Queue** displays all emails that will be processed by the automation service (to perform the actual sending of the email).
- **Global Administrators** contains the global administrators for PaperVision Enterprise.
- **Import** lists data groups that have been queued up to be imported by the PaperVision Enterprise Automation Service.

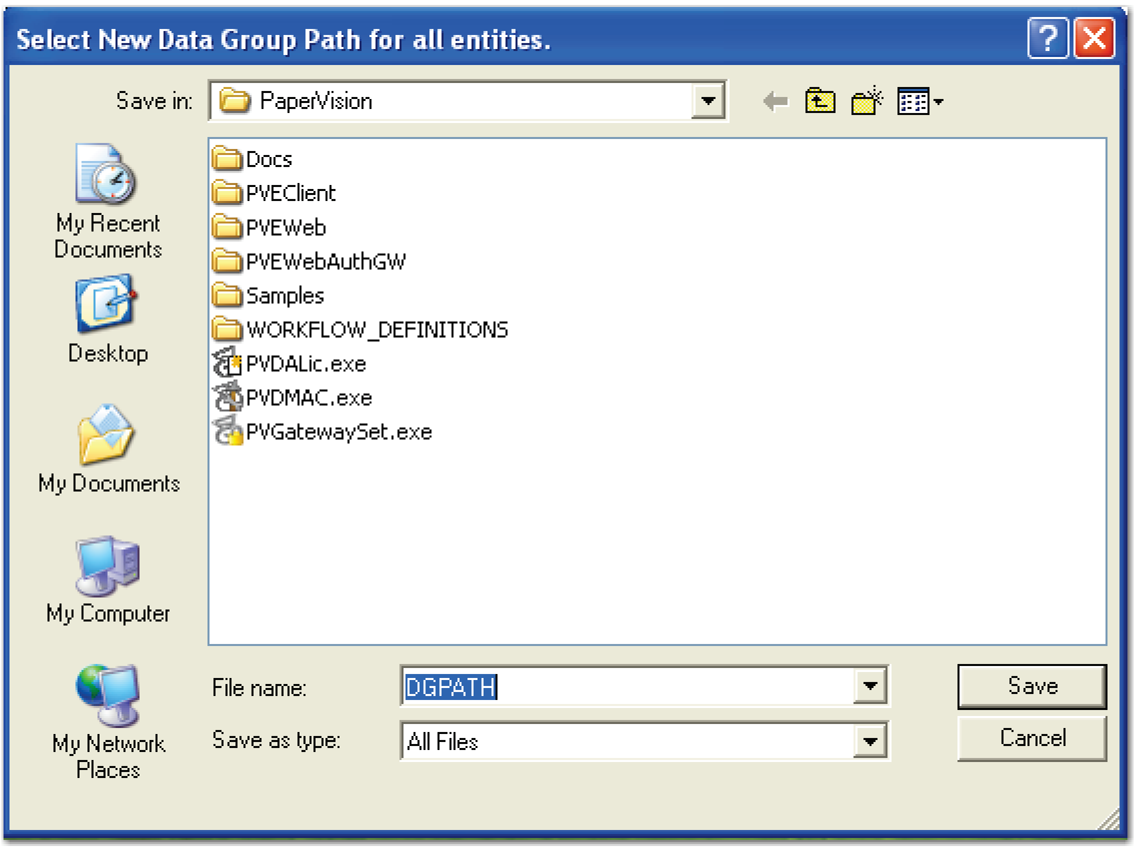
- **Licensing** allows global administrators to manage PaperVision Enterprise licenses for each entity.
- **Maintenance** lists maintenance items to be processed by the PaperVision Enterprise Automation Service and logs of completed maintenance items.
- **Migration Jobs** allow global administrators to facilitate the collection of documents from a repository into external data groups (CD-ROMs, etc.).
- **Notifications** display system notifications for global administrators when specific events occur.
- **Process Locks** contains a list of operations currently locked by the system in order to prevent attempts to run the same operation simultaneously.
- **Report Management Errors** displays all report management errors for all report management jobs for all entities.
- **System Settings** contains PaperVision Enterprise Automation Service Scheduling that automates the execution of certain operations on timed intervals. System Settings also contains the Maximum Global Session Idle Time and Maximum Maintenance Log Age setting for all entities.

Changing Data Group Paths for All Entities

In some scenarios, you might need to modify the Data Group Path setting for all entities in a single operation. This is helpful when new storage is to be utilized for all newly imported data groups so you do not have to individually modify each entity. This operation has no effect on existing data groups, only newly imported, or created, data groups.

To change the data group paths for all entities:

1. In the PaperVision Administration Console, highlight the **Entities** folder, and then click the **Change Data Group Paths for All Entities** icon. The **Select New Data Group Path for all entities** dialog box appears.



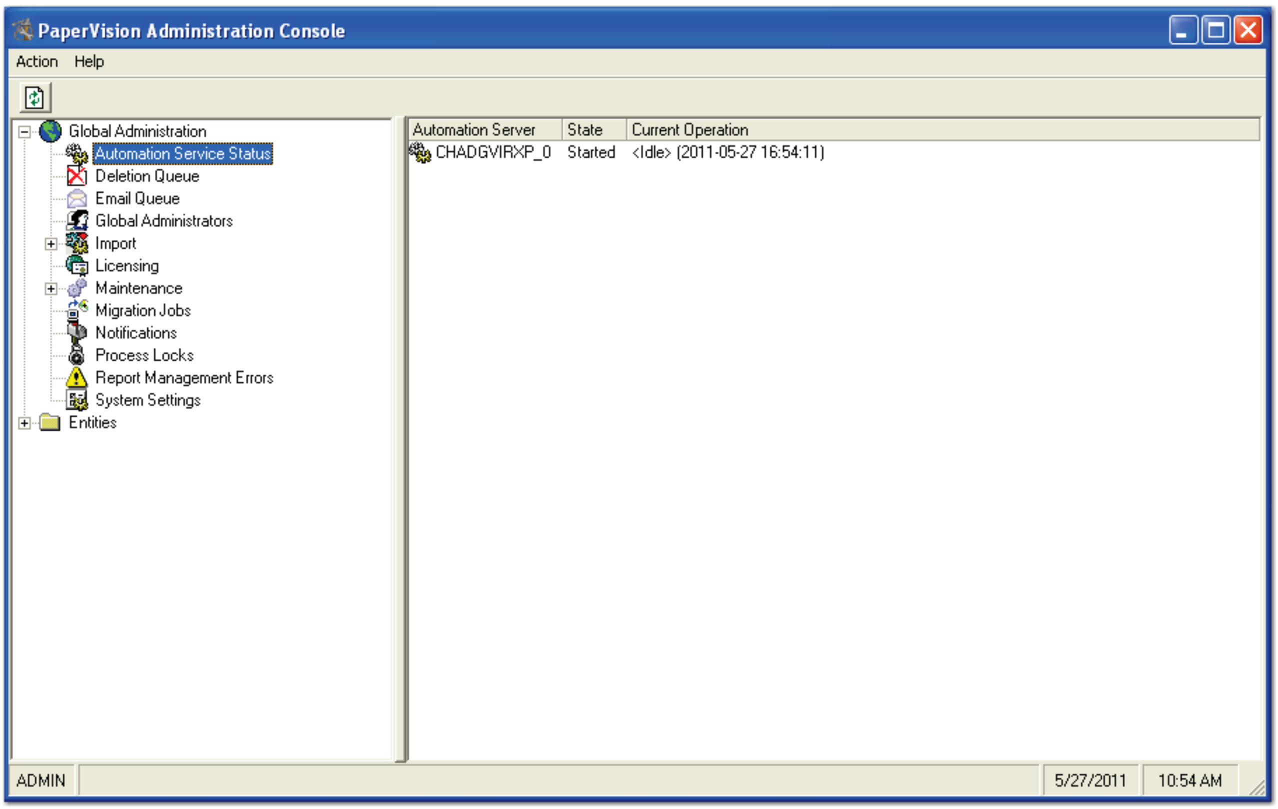
Select Data Group Path for all Entities

2. Select the directory or path where the new data group path will reside.
3. Enter the name of the path in the **File Name** field, and then click **Save**.

Automation Service Status

The Automation Service Status displays the current status of all automation servers connected to the PaperVision Enterprise database, allowing you to determine what automated processes are currently in progress. You can configure multiple automation service processes to run on a single physical machine. In this scenario, each automation server process is specified in the MACHINENAME_INSTANCE format. To change the number of automation services that can be run simultaneously, launch the PaperVision Configuration Utility, and then enter the value in the **Simultaneous Processes** field. For more information on the PaperVision Configuration Utility, see the accompanying **PaperVision Enterprise Installation and Getting Started Guide**.

You can also stop and start the automation service processing for any server by selecting the stop  or start  icons after selecting an automation server. Stopping the service operations does not stop the process itself; rather, the process receives a command to not perform further processing after it has finished its current operation.

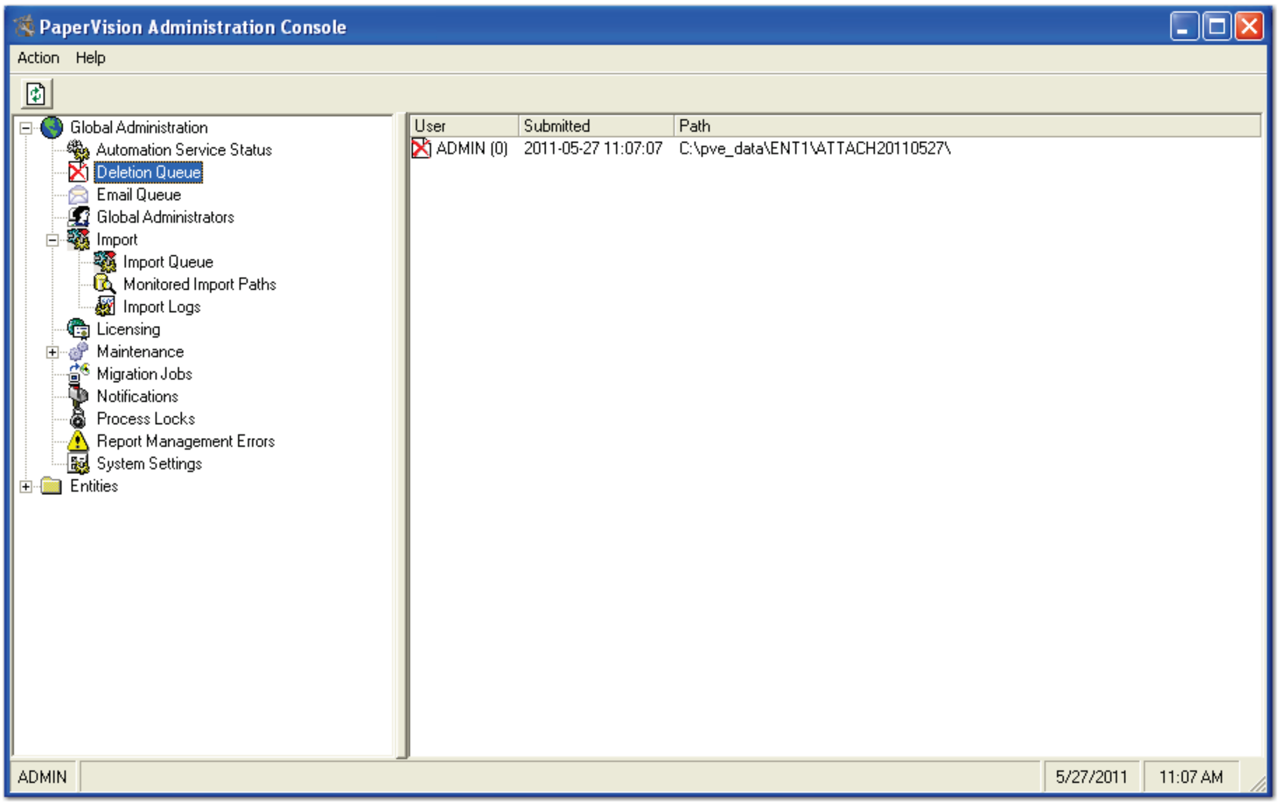


Automation Service Status

> **IMPORTANT!**
>
> To support the ISO 8601 international date format, many functions in PaperVision Enterprise may now display dates and times using the "yyyy-mm-dd hh:nn:ss" format.

Deletion Queue

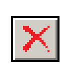
When you purge a data group, you can submit the purge to be processed automatically by the system. The Deletion Queue provides a list of directories that have been submitted to be deleted (based on the purging of a data group) and have not yet been processed by the automation service.



Deletion Queue

The deletion queue lists the user who submitted the purge (and the corresponding entity ID), when the job was submitted, and the path that is to be purged.

To remove an item from the deletion queue:

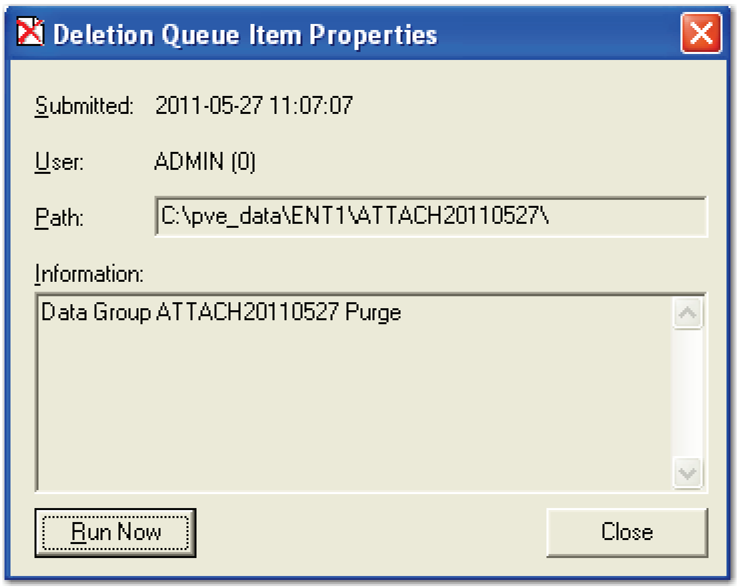
1. Highlight the items to remove, and then select the **Delete**  icon.
2. Select **Yes** to confirm the removal.

Manually Running an Item in the Deletion Queue

Generally, items in the deletion queue will be purged by the PaperVision Automation Service once they have been successfully processed. However, you can manually run a deletion queue item.

To manually run a deletion queue item:

1. Double-click on the appropriate item. The **Deletion Queue Item Properties** screen appears.

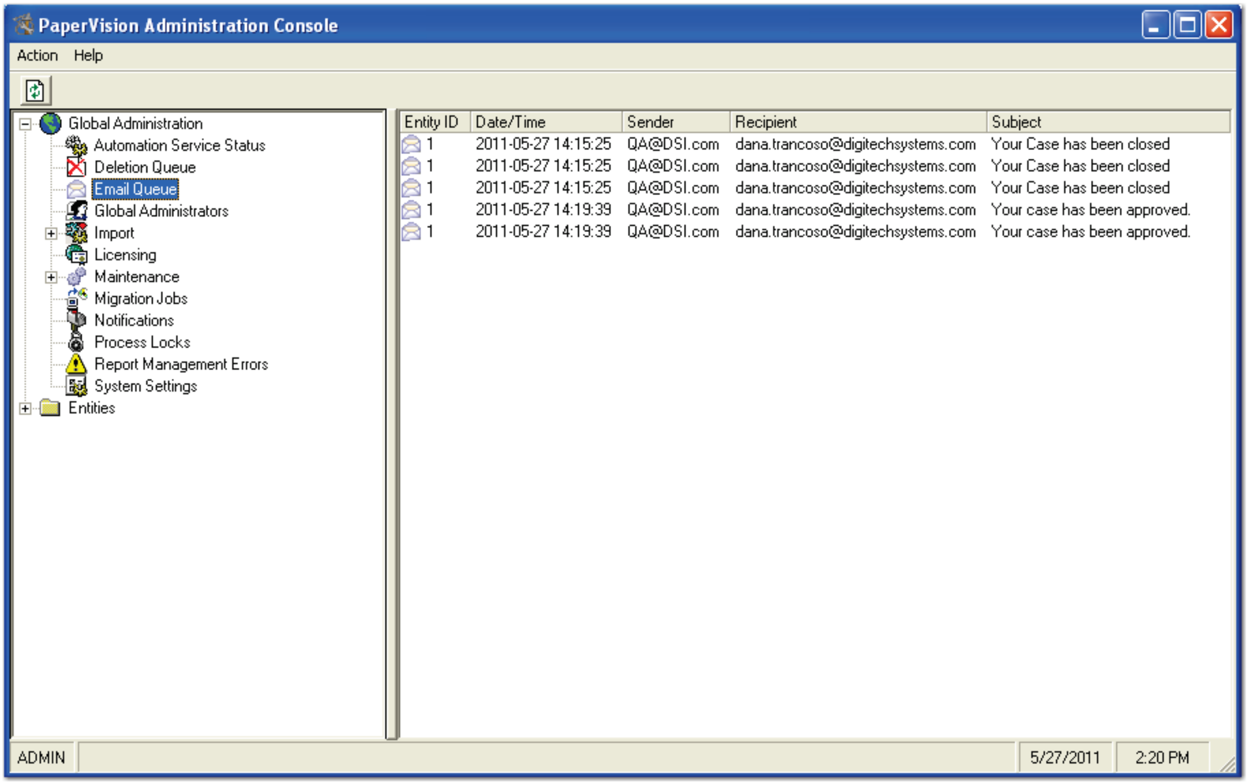


Deletion Queue Item Properties

2. Click **Run Now** to process the deletion queue item and remove all of the files in the specified directory. PaperVision Enterprise will run the deletion queue item and return to the **Deletion Queue** screen when completed.

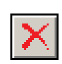
Email Queue

When email notifications are sent, they are placed into a holding queue which is then processed by the automation service (to perform the actual sending of the email). This holding queue, or Email Queue, can be viewed as a list of emails that are waiting to be sent.



Email Queue

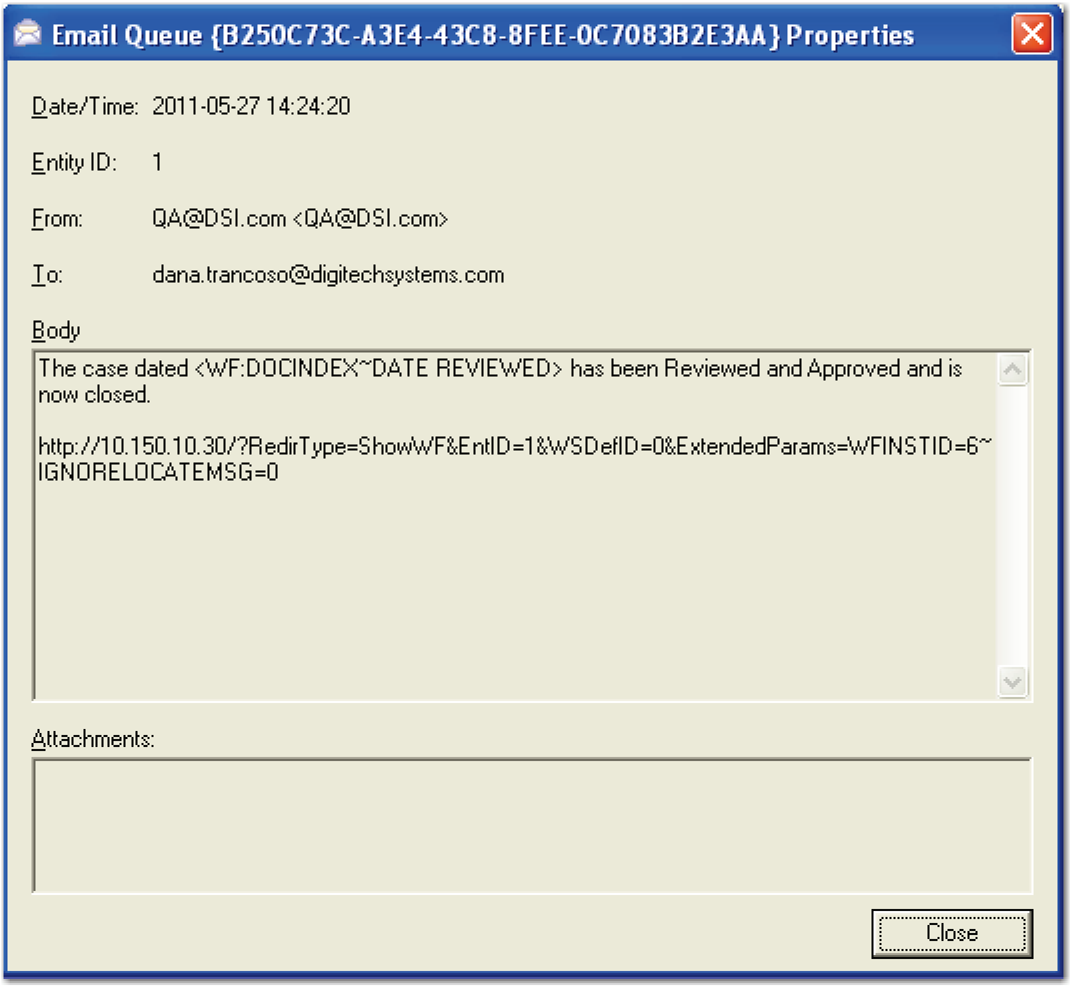
To remove an item from the email queue:

1. Highlight one or more items, and then select the **Delete**  icon.
2. Select **Yes** to confirm the removal.

> **Note**:
>
> If Email Queue items are deleted (either via sending the email or deleting them manually), their attachments are removed from the Attachment Path.

Viewing Properties of Email Queue Items

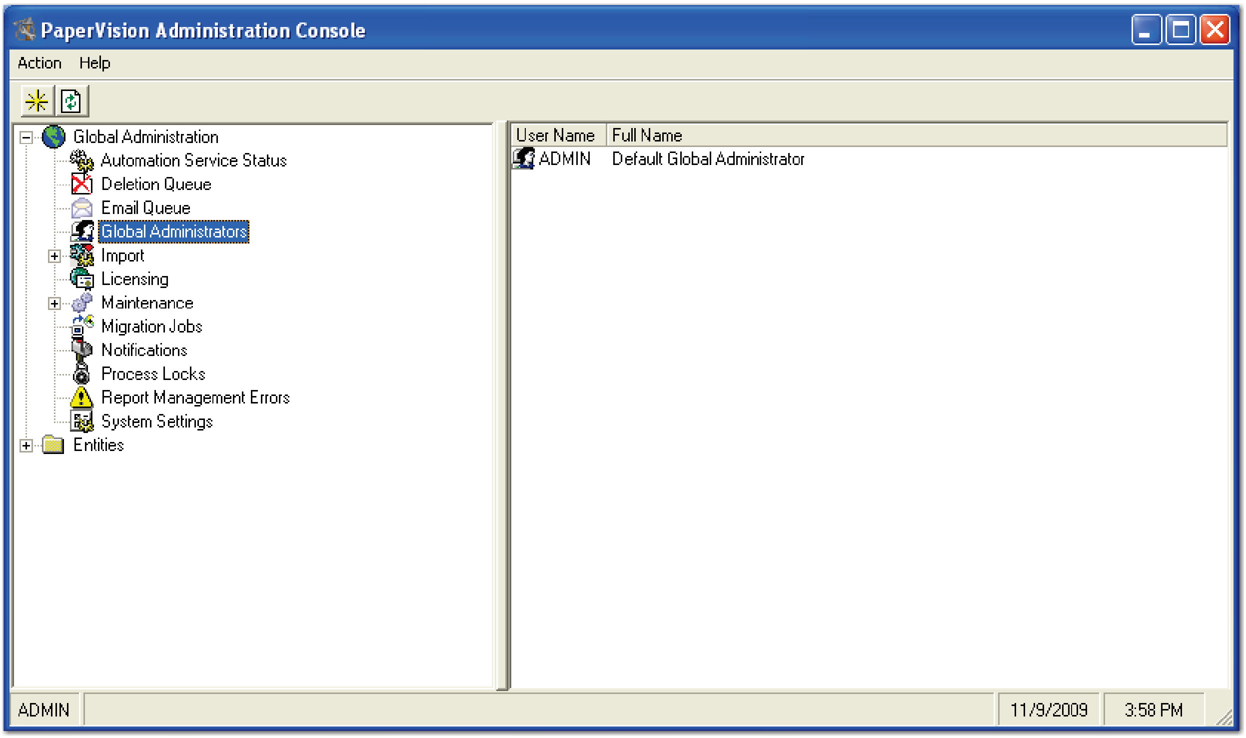
To view the properties for an email queue item, double-click on the appropriate email queue item. The **Email Queue Properties** screen appears.



Email Queue Item Properties

Global Administrators

Global administrators can control every aspect of configuration for the PaperVision Enterprise system, including configurations for all entities. However, global administrators cannot access the documents in a project, as system (entity) administrators can. To view the list of global administrators, select **Global Administration > Global Administrators**.

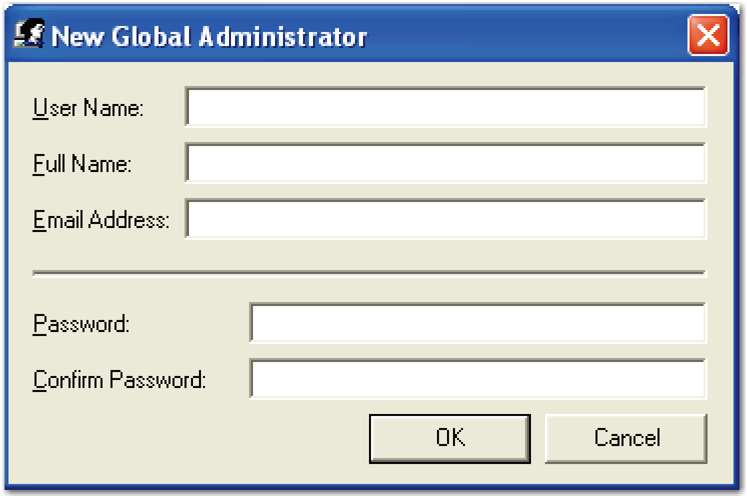


Global Administrators

Creating a New Global Administrator

To create a new global administrator:

1. Click the **New** icon. The **New Global Administrator** dialog box appears.



New Global Administrator

2. Enter the user name that will be used to log into PaperVision Enterprise.
3. Enter the user's **Full Name** (optional). The full name is used for some of PaperVision Enterprise reporting capabilities.
4. Enter the user's **Email Address** (optional). This is used to send notifications via email to the global administrator.
5. Enter the initial **Password** to access the system.
6. Enter the password again to confirm it.
7. Click **OK**.

Editing the Properties of a Global Administrator

To edit the properties of a global administrator:

1. Double-click the global administrator in the list.
2. Make the necessary modifications to the account.
3. Click **OK**.

> **Note**:
>
> Modifications take effect the next time the global administrator logs into the PaperVision Enterprise Administration Console.

Deleting Existing Global Administrators

To delete existing global administrators:

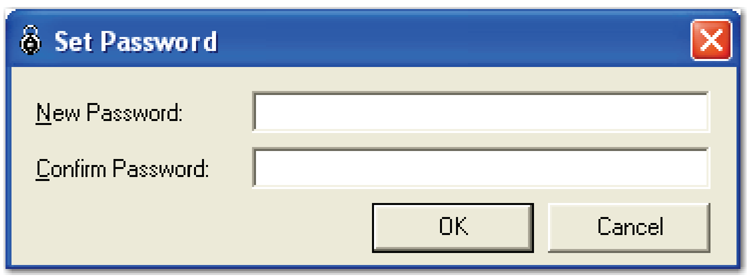
1. Highlight one or more accounts.
2. Click the **Delete** icon.
3. Click **Yes** to confirm the deletion.

Setting a Global Administrator's Password

In some scenarios, it may be necessary to set (or change) a global administrator's password.

To set a global administrator's password:

1. Highlight the global administrator in the list.
2. Click the **Set Password** icon. The **Set Password** dialog box appears.

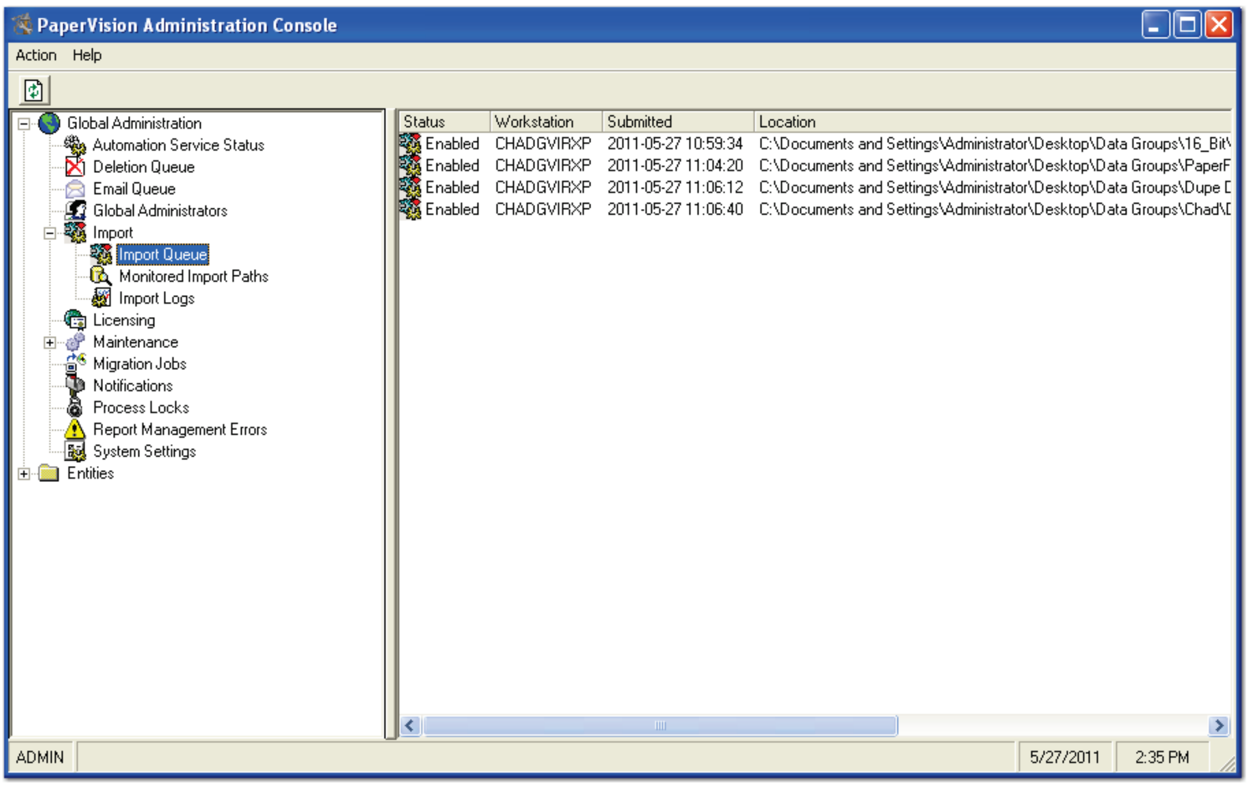


Set Password

3. Enter the password in the **New Password** field (passwords are case-sensitive).
4. Enter the password once again in the **Confirm Password** field.
5. Click **OK** to set the new password.

Import Queue

The Import Queue lists data groups that have been queued up to be imported by the PaperVision Enterprise Automation Service. When an administrator manually imports a data group and submits the job (rather than running it immediately), the job is moved into the Import Queue. When the automation service gets an opportunity to process automated imports, it will look for any items in the import queue that have a Workstation value matching its own computer name. Once the data group has been imported, it is automatically removed from the import queue. If an error occurs during the import process, the import queue entry is updated with the error and then disabled. Once the problem has been resolved, the administrator can enable the import queue entry once again. To view the list of Import Queue items, select **Global Administration > Import > Import Queue**.

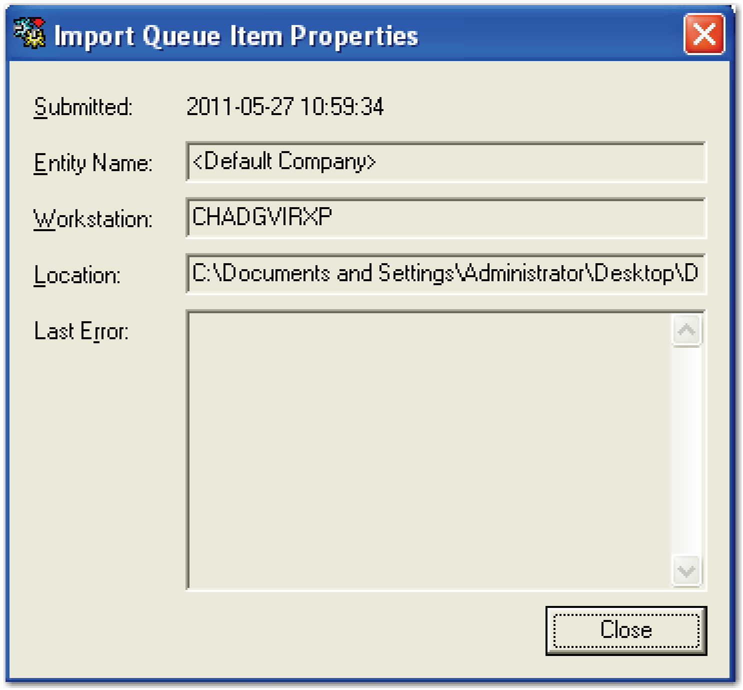


Import Queue

Viewing the Properties of Import Queue Items

To view the properties of Import Queue items:

1. Double-click the appropriate import queue item in the list. The **Import Queue Item Properties** dialog box appears.



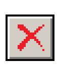
Import Queue Item Properties

2. Click **Close**.

Deleting Import Queue Items

You can delete import queue items that have not been processed. This is useful if a data group has accidentally been queued up for import.

To delete import queue items:

1. Highlight one or more import queue items.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Monitored Import Paths

The PaperVision Automation Service offers the ability to have data automatically imported (see the section on **System Settings** for more information on enabling automation services). This can be used to import data groups that are live (are being processed by another application) or data groups that have been copied (or FTP'd) to a location that the automation service is monitoring.

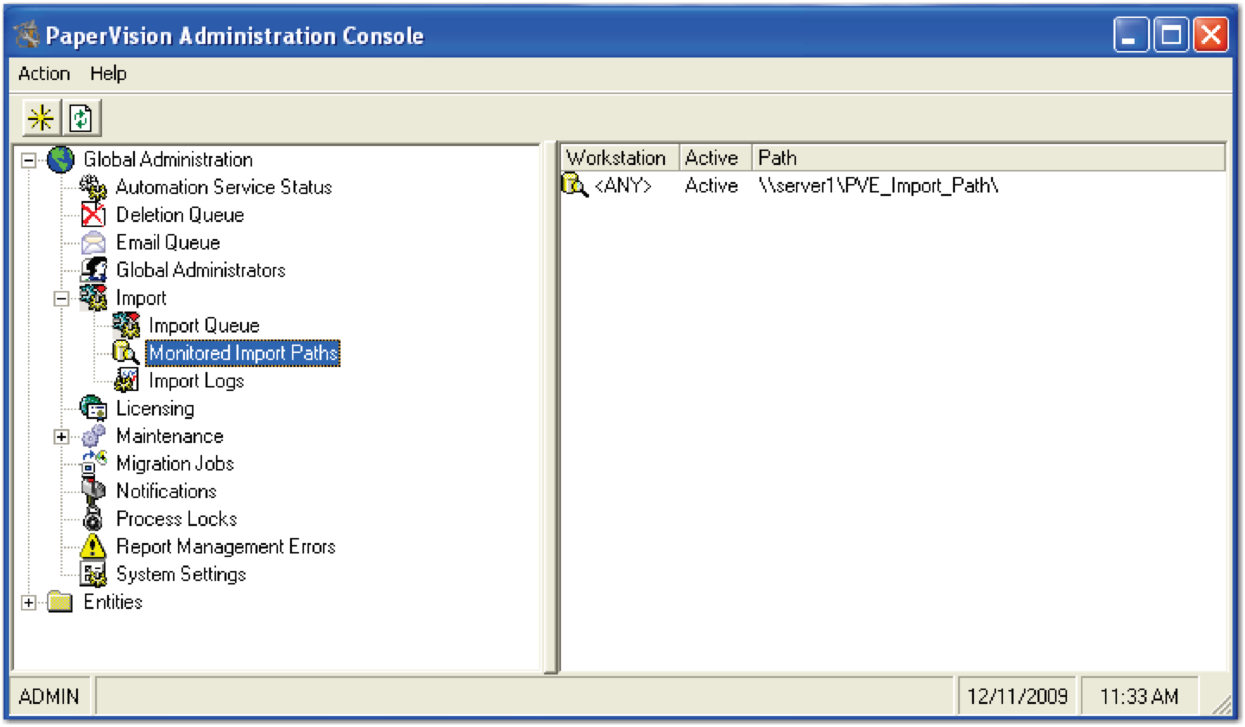
When monitored import paths are being used, PaperVision Enterprise looks for the existence of one of the following files in a monitored import path:

- DATAGRP.MDB (for PaperFlow data groups)
- COLDGRP.DAT (for DataFlow data groups)
- CDSTAMP.MDB (for Docu-ROM data groups)
- PROJECT.MDB (for ScanTRAX data groups)
- CARFILE.TXT (for C.A.R. data)
- DATAGRP.XML (for XML data groups)
- ERMGROUP.XML (for Report Management data groups)
- MSGGROUP.XML (for Message Capture data groups)
- *.PVPKG (for PaperVision Package Files)

The file does not have to exist in the root of the monitored import path. In fact, it can be placed in any location below the monitored import path. If one of these files exists, the automation service imports the data group. For this reason, it is recommended that these files be copied (or FTP'd, etc.) absolutely last, rather than copying the data group file and then all of the supporting image or document files. Furthermore, you will need to take care that the automation service does not begin to import a data group before the file is completely transmitted. For instance, if you are FTP'ing the data group to a monitored import path, you should send all of the supporting image and document files, then send the file – but name it something else (e.g., DATAGRP.TMP). After the file is completely transferred, rename the DATAGRP.TMP file back to its original name. At this point the automation service will start to process the new data group.

PaperVision Enterprise provides an easy way around this issue for automated imports of XML data groups, Report Management Data Groups, and PaperVision Enterprise Package Files. When it locates one of these data groups, it checks to see if a SUBMIT file also exists in the directory (DATAGRP.SUBMIT, ERMGROUP.SUBMIT, MSGGROUP.SUBMIT, <packagefilename>.SUBMIT). If not, it leaves that data group unprocessed until the SUBMIT file has been copied or created in the same directory as the data group file. The contents of the SUBMIT file are not important – in fact, it can be an empty file.

To view the monitored import paths, select **Global Administration > Import > Monitored Import Paths**.

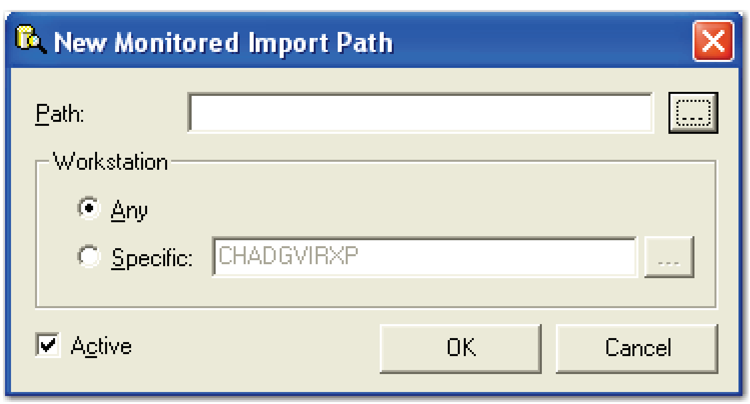


Monitored Import Paths

Creating a New Monitored Import Path

To create a new monitored import path:

1. Click the **New**  icon. The **New Monitored Import Path** dialog box appears.



New Monitored Import Path

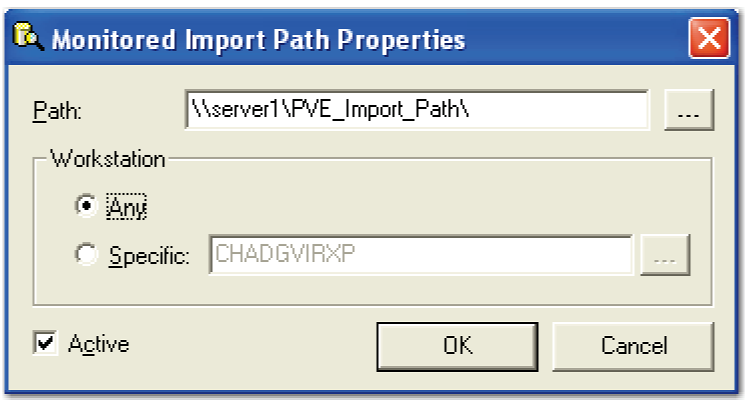
2. Manually enter the path, or click the ellipsis button to browse to the path.

3. Select the **Workstation** that will monitor the import path. Select **Any** to allow any automation server to monitor the path. If you want to assign a specific automation server or workstation, proceed to the next step.
4. Select **Specific** to either manually enter the workstation or browse to select the workstation that will load the data from the path. You can enter or select a specific server name (i.e. Server1) or workstation instance in the ServerName_Instance format (i.e. assigning Server1_13 would allow import paths to be monitored by instance #13 on Server1).
5. If you wish to temporarily disable the monitoring of this path, remove the check mark from the **Active** setting.
6. Click **OK**.

Editing an Existing Monitored Import Path

To edit an existing monitored import path:

1. Double-click the monitored import path in the list. The **Monitored Import Path Properties** dialog box appears.

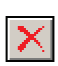


Monitored Import Path Properties

2. If applicable, change the import path, workstation settings, and active status.
3. Click **OK**.

Deleting an Existing Monitored Import Path

To delete monitored import paths:

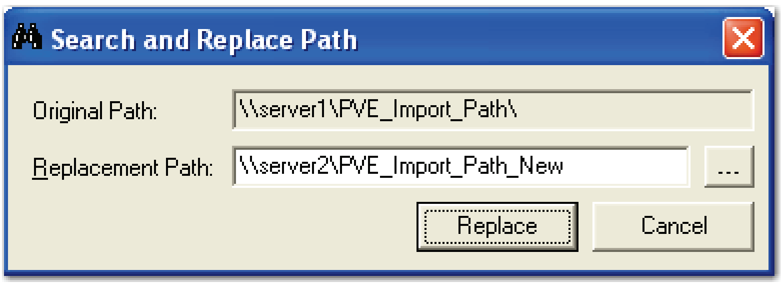
1. Highlight one or more monitored import paths.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Modifying Multiple Monitored Import Paths

In some scenarios, you may need to change multiple monitored import paths to a new location. Once the data has been physically moved, it is necessary to modify the paths that PaperVision Enterprise monitors.

To modify multiple monitored import paths:

1. Highlight more than one monitored import paths.
2. Click the **Modify Path** icon. PaperVision Enterprise will evaluate all selected import paths and find their common path. The **Search and Replace Path** dialog box appears.

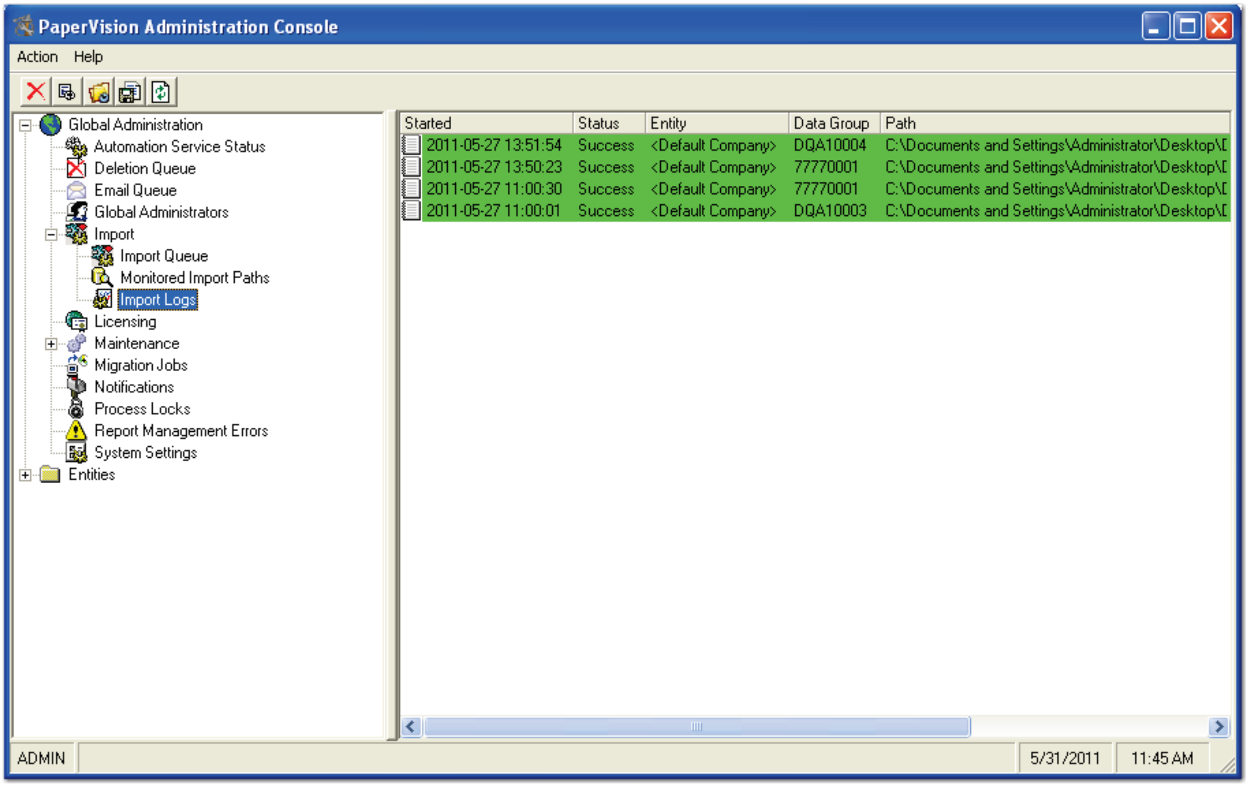


Search and Replace Path

3. Click the ellipsis button to locate the new **Replacement Path.**
4. Click **Replace**.

Import Logs

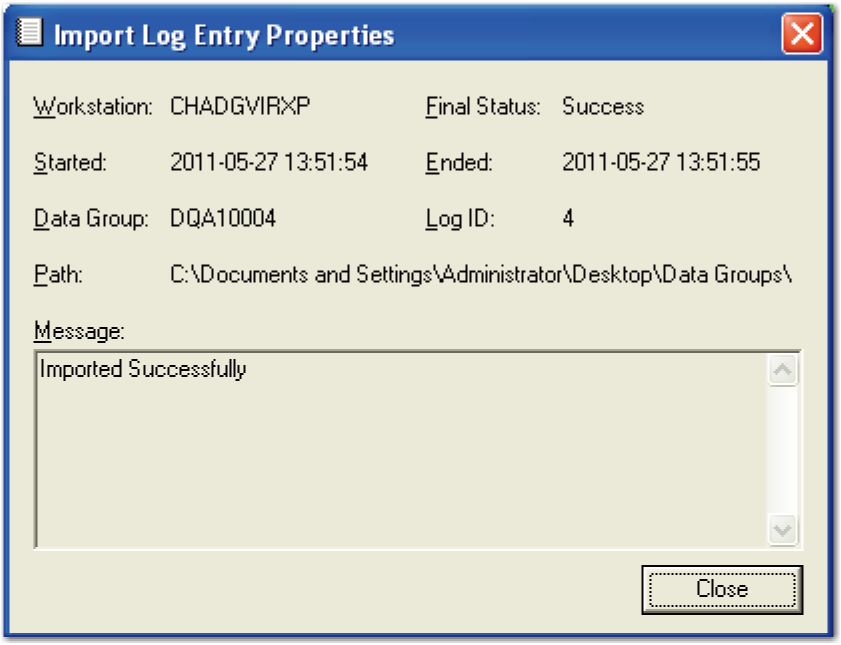
Import logs provide a recorded history of data group imports that have occurred for both manual imports and imports performed by the PaperVision Automation Service. To view the import logs, select **Global Administration > Import > Import Logs**.



Import Logs

To view an import log entry:

1. Double-click the appropriate import log entry. The **Import Log Entry Properties** screen appears.



Import Log Entry Properties

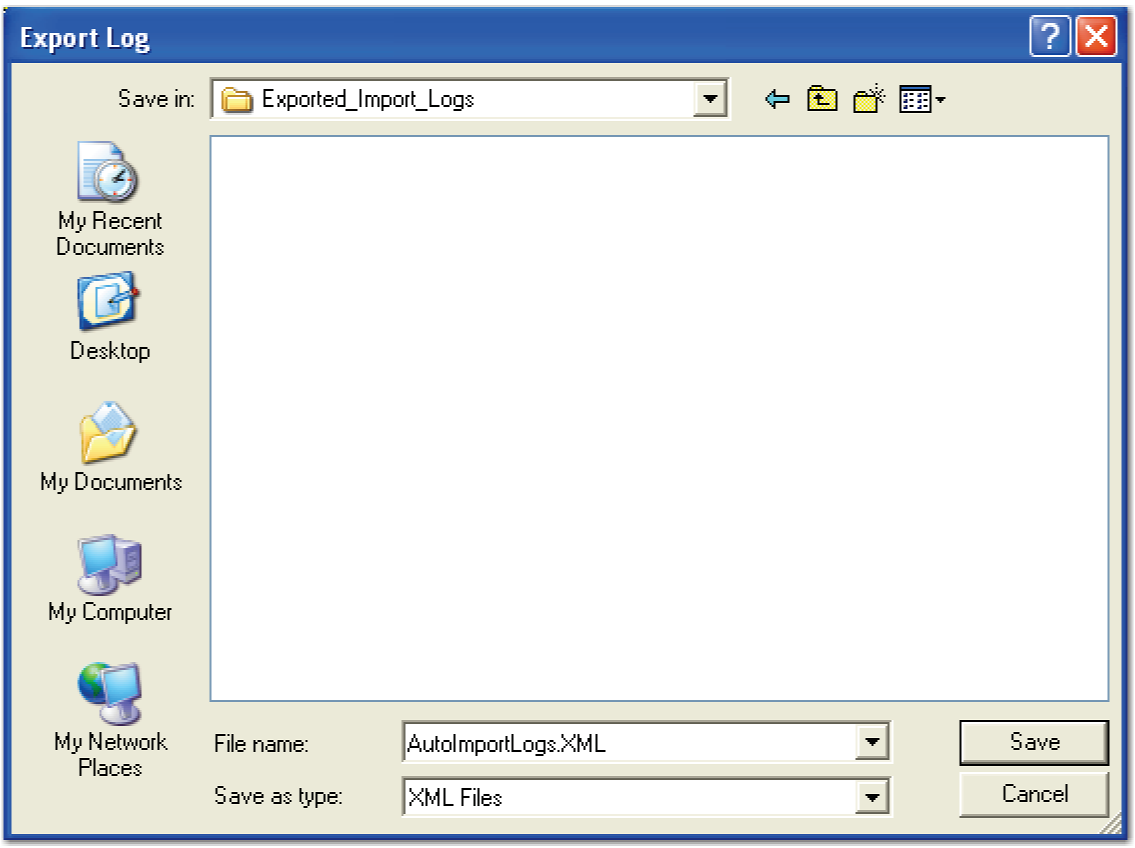
2. Click **Close**.

Exporting Import Log Entries

You can export one or more import log entries to an XML file.

To export import log entries:

1. In the **Import Logs** screen, select one or more import logs.
2. Click the **Export Selected Item(s)**  icon.
3. Click **Yes** to confirm the export. The **Export Log** dialog box appears.



Export Log

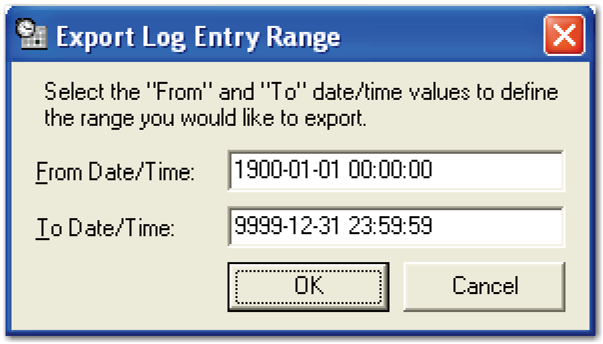
4. Locate the directory where the export will be written.
5. Enter the file name for the export.
6. Click **Save**. A message will notify you where the export will be written.

Exporting a Range of Import Log Entries

You can also export a range of import log entries to an XML file.

To export a range of import log entries:

1. Click the **Export Range**  icon. The **Export Log Entry Range** dialog box appears.

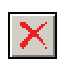


Export Log Entry Range

2. Enter the date ranges (and times, if applicable), and then click **OK**.
3. Click **Yes** to confirm the export.
4. In the **Export Log** dialog box, enter the file name and path where the log entries will be written.
5. Click **Save**. A message will notify you when the process is complete.

Deleting Import Log Entries

To delete import log entries:

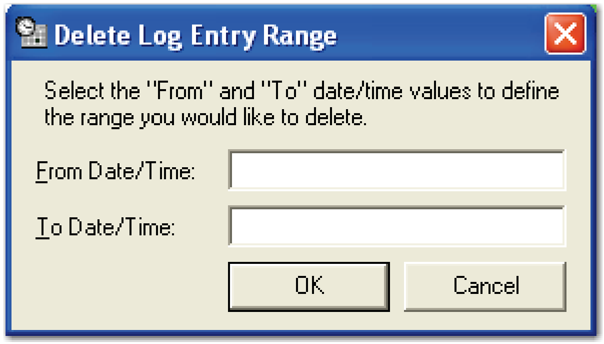
1. Highlight one or more import log entries.
2. Click the **Delete Selected Item(s)**  icon.
3. Click **Yes** to confirm the deletion.

Deleting a Range of Import Log Entries

You can also delete a range of import log entries.

To delete a range of import log entries:

1. Select the **Delete Range** icon. The **Delete Log Entry Range** dialog box appears.



Delete Log Entry Range

2. Enter the date ranges (and times, if applicable), and then click **OK**.
3. Click **Yes** to confirm the deletion.

Archiving Import Log Entries

Although import log archival can be scheduled as an automated service task, you can also manually archive the import log entries. The archival process uses the Global System Settings' **Import Log Archiving – Leave entries for the last X hours in the system** value to determine which entries to archive.

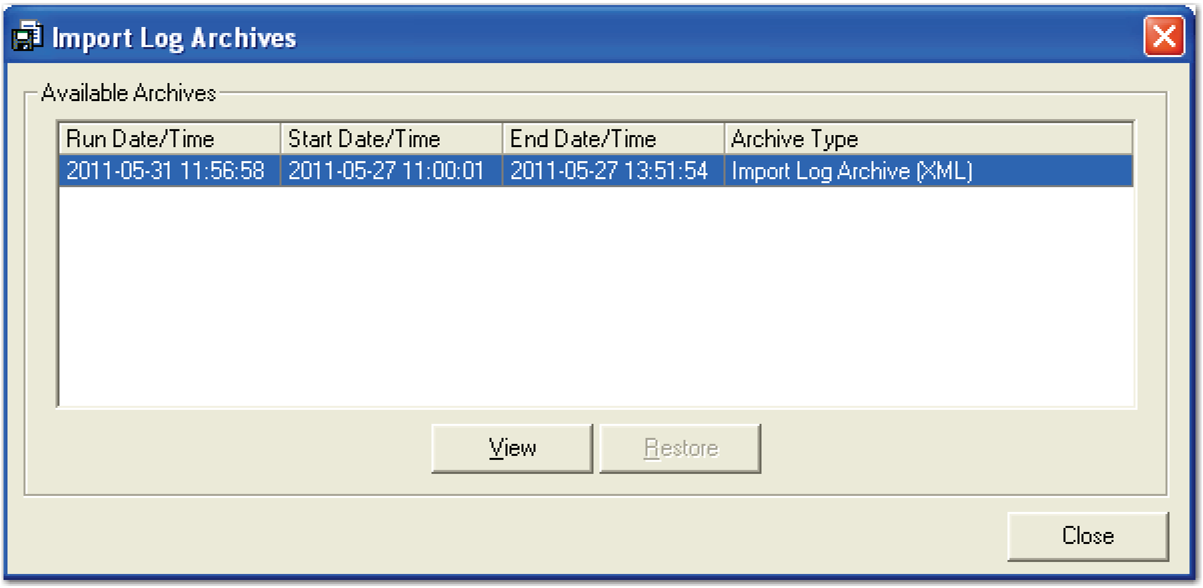
To manually archive import log entries:

1. Click the **Archive Old Import Logs** icon.
2. Select **Yes** to confirm the archival.

Viewing Import Log Archives

To view the import log archives:

1. Click the **Import Log Archives**  icon. The **Import Log Archives** dialog box appears.

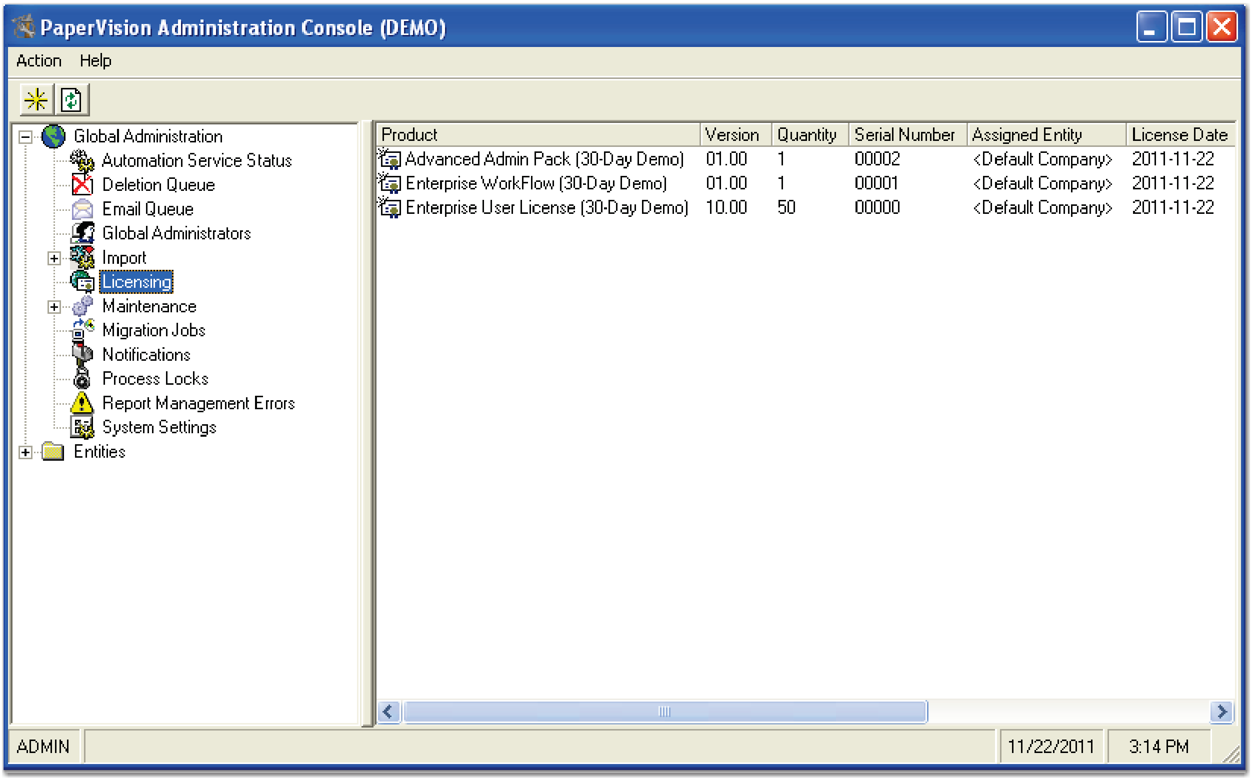


Import Log Archives

2. Highlight an archive, and then click the **View** button.
3. Click **Close**.

Licensing

The licensing features of PaperVision Enterprise allow you to easily expand your system by adding additional licenses, as well as assign licenses to different entities within the system. Also, "Named" licenses (assigned to a specific workstation as opposed to concurrent licenses) can be assigned to their appropriate system/workstation. To view the **Licensing** screen, select **Global Administration > Licensing**.

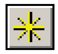


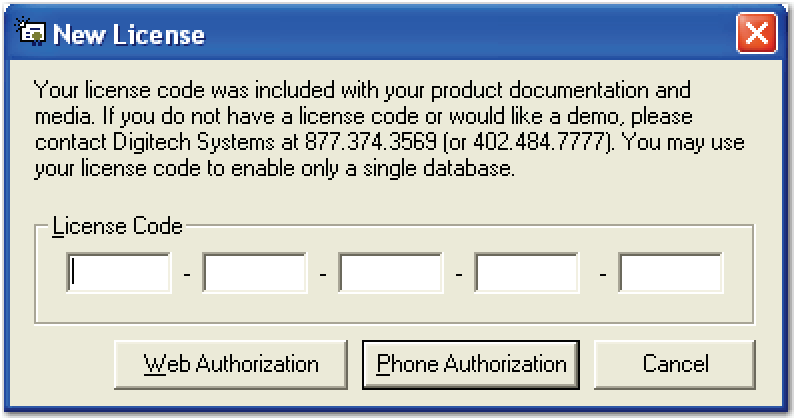
Licensing

Adding a New License

You can add a new license via the internet or by contacting Digitech Systems' Technical Support team. If you are integrating with PaperVision Capture, a global administrator can also add licenses in the PaperVision Capture Administration Console.

To add a new license:

1. Click the **New**  icon, and the **New License** dialog box appears.



New License

2. Enter the **License Code** that was included with your product documentation and media.
3. Click the **Web Authorization** button to obtain the license key online.
4. If you do not have access to the internet, click the **Phone Authorization** button. The **Obtain Authorization Code** screen appears.

Obtain Authorization Code

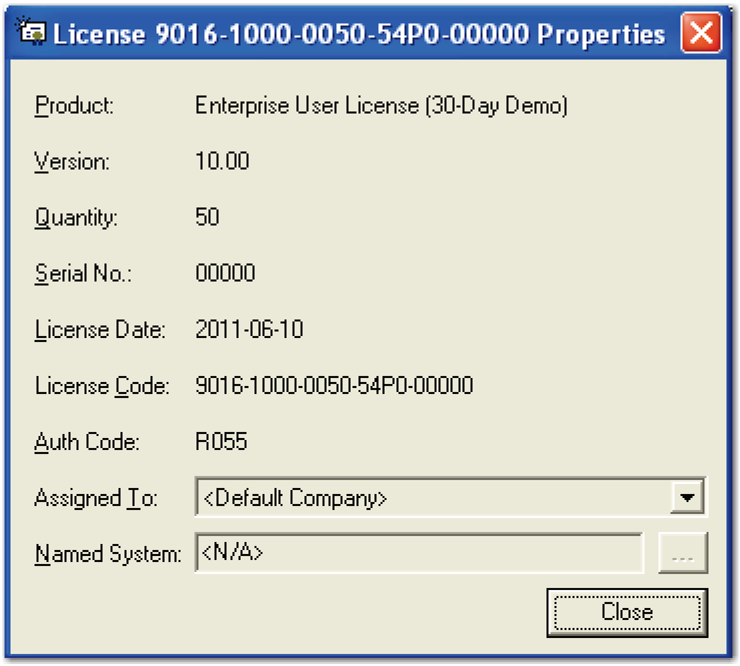
5. Contact Digitech Systems' Technical Support toll-free at (877)374-3569 or direct at (402)484-7777 to obtain your license key.
6. Enter the authorization code provided to you by Digitech Systems' Technical Support, and then click **OK**. The license will be added to the database.

Editing Existing Licenses

It may be necessary to edit an existing license to assign the license to a different entity or named system.

To edit an existing license:

1. Select the appropriate license, and then click the **Properties**  icon. The **License Properties** dialog box appears.

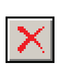


License Properties

2. To assign a license to an entity, click the **Assigned To** drop-down menu to select another entity.
3. To assign a license to a specific computer, enter the machine name in the **Named System** field.
4. Or, click the **Browse** button to locate the machine name.
5. Click **OK**.

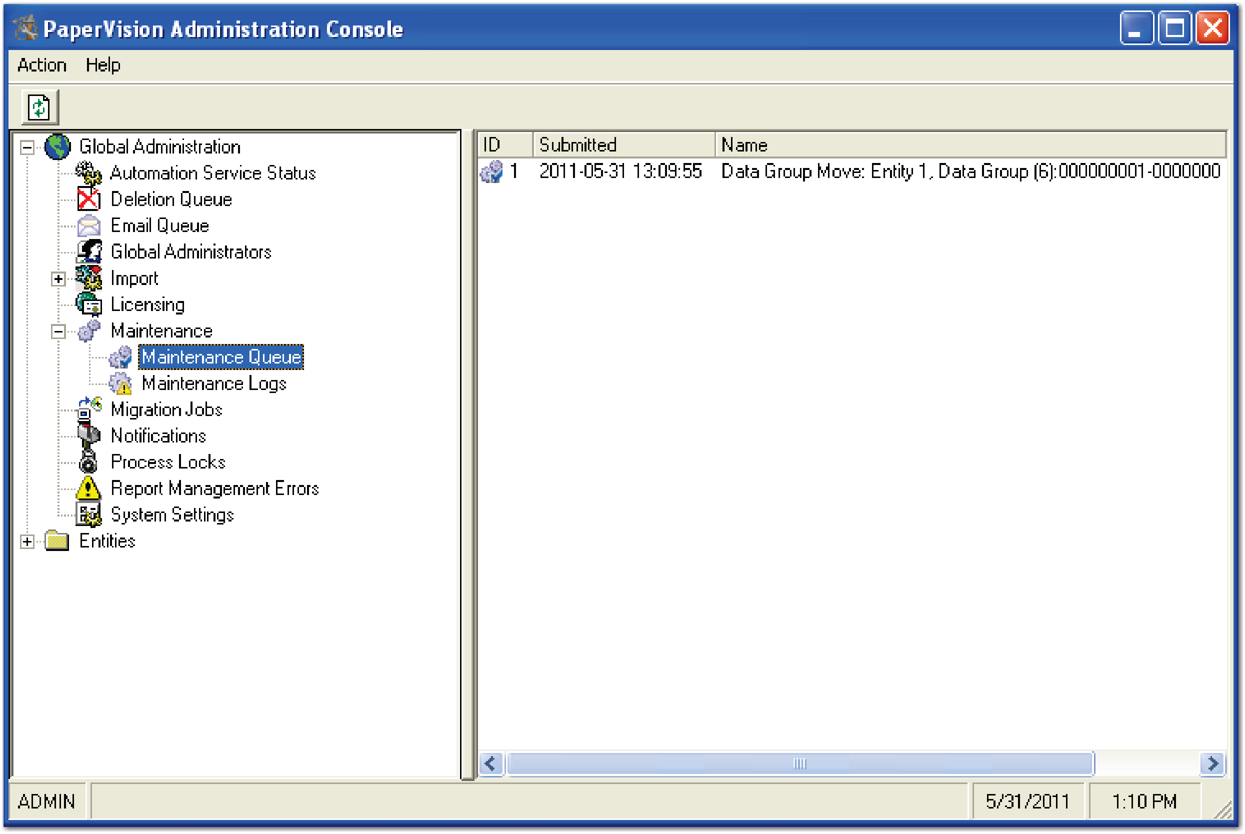
Deleting an Existing License

To delete an existing license:

1. Highlight the license in the list. You can also delete multiple licenses at one time.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Maintenance Queue

The Maintenance Queue lists maintenance jobs (such as full-text rebuild, full-text compression, data group encryption, data group moves, etc.,) that have been queued to be processed by the PaperVision Enterprise Automation Service. Once the job has been processed, it is automatically removed from the queue. To view maintenance queue items, select **Global Administration > Maintenance** > **Maintenance Queue.**

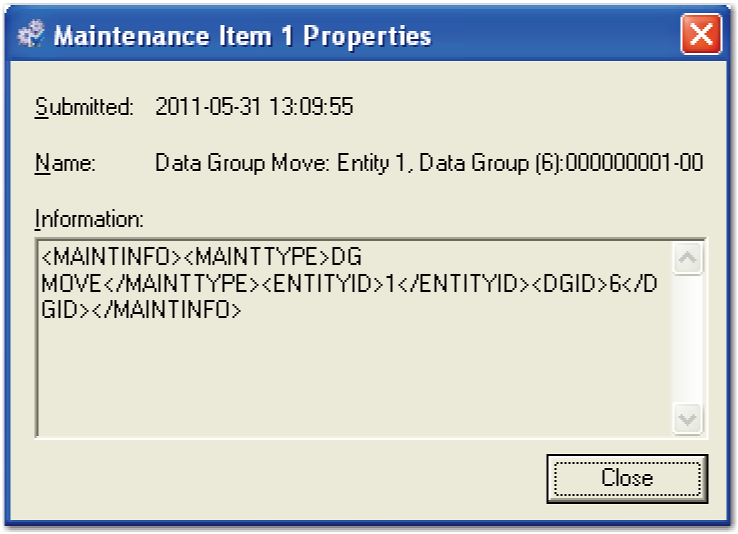


Maintenance Queue

Viewing Maintenance Queue Item Properties

To view import queue item properties:

1. Select the appropriate maintenance queue item, and then click the **Properties** icon. The **Maintenance Queue Item Properties** dialog box appears.



Maintenance Queue Item Properties

2. Click **Close**.

Deleting Maintenance Queue Items

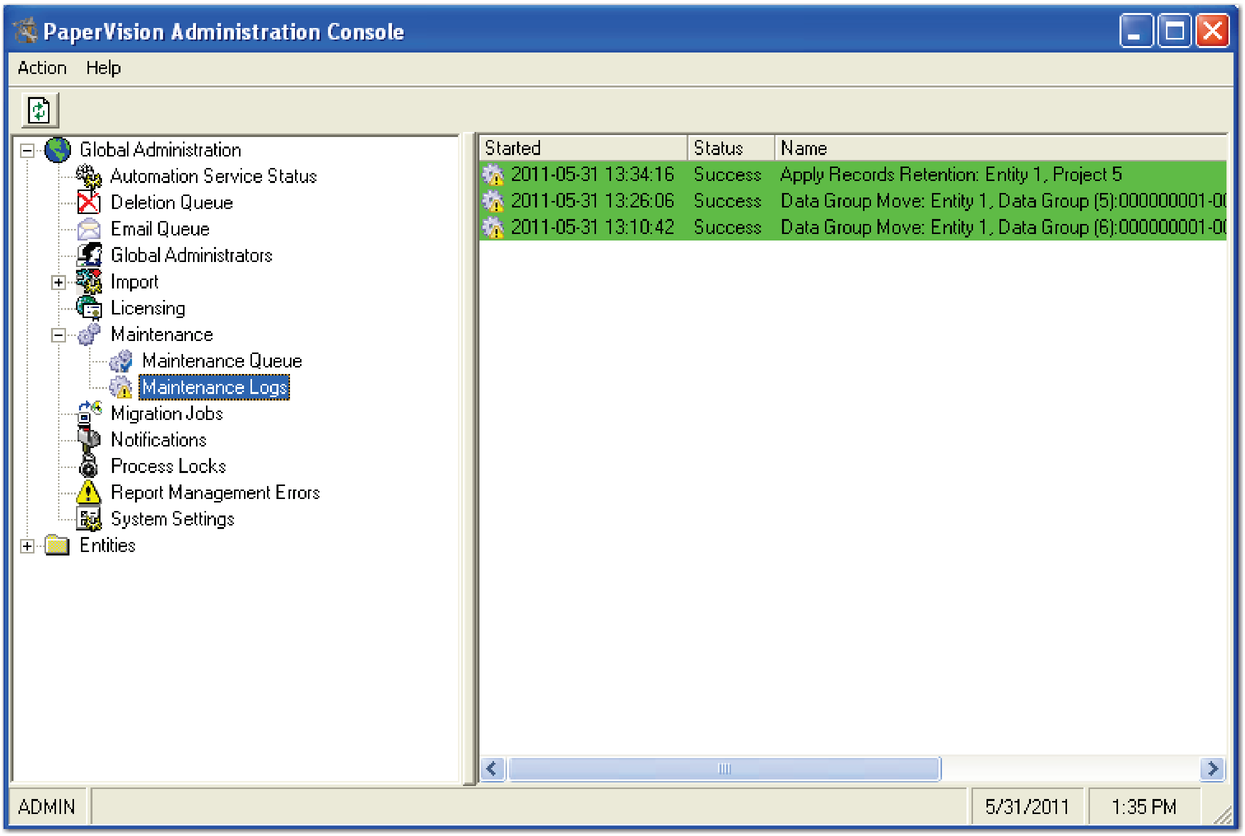
You can delete maintenance queue items that have not been processed. This operation can be performed on a job has accidentally been queued to be processed.

To delete maintenance queue items:

1. Select one or more items.
2. Click the **Delete** icon.
3. Click **Yes** to confirm the deletion.

Maintenance Logs

Maintenance Logs provide a recorded history of maintenance jobs performed by the PaperVision Automation Service. To view maintenance log entries, select **Global Administration > Maintenance > Maintenance Logs.**

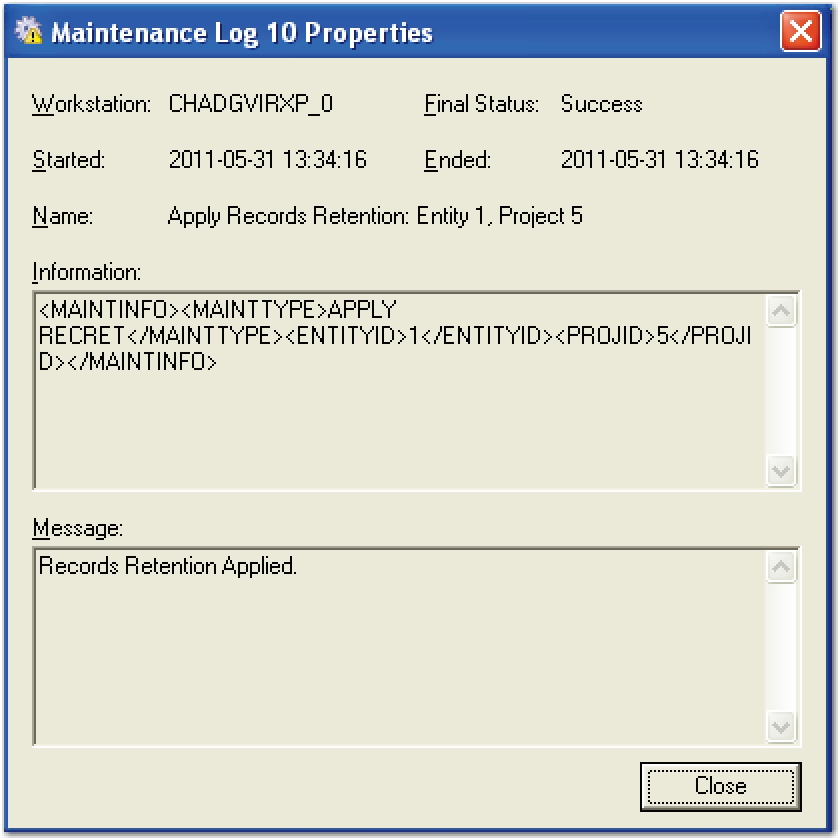


Maintenance Logs

Viewing a Maintenance Log Entry

To view a maintenance log entry:

1. Select the appropriate maintenance log entry, and then click the **Properties**  icon. The **Maintenance Log Properties** dialog box appears.



Maintenance Log Entry Properties

2. Click **Close**.

Exporting Maintenance Log Entries

You can export selected maintenance log entries to an XML file.

To export selected maintenance log entries:

1. In the **Maintenance Logs** screen, select one or more logs.
2. Click the **Export**  icon.
3. Click **Yes** to confirm the export.
4. In the **Export Maintenance Logs** dialog box, locate the export directory where the export will be written.
5. Enter the file name.
6. Click **Save** to confirm the export. A message will notify you where the export was written.

Deleting Maintenance Log Entries

To delete maintenance log entries:

1. In the **Maintenance Logs** screen, select one or more logs.
2. Click the **Delete** icon.
3. Click **Yes** to confirm the deletion.

Migration Jobs

Global administrators have the same capability to process migration jobs as entity system administrators. However, global administrators can see migration jobs for all entities.

Migration jobs are handled by global administrators in the exact same way that entity system administrators handle them. For more information on working with migration jobs, refer to the **Migration Jobs** section in the Entity Administration chapter.

Notifications

Global administrators will receive automated notifications when any of the following events occurs:

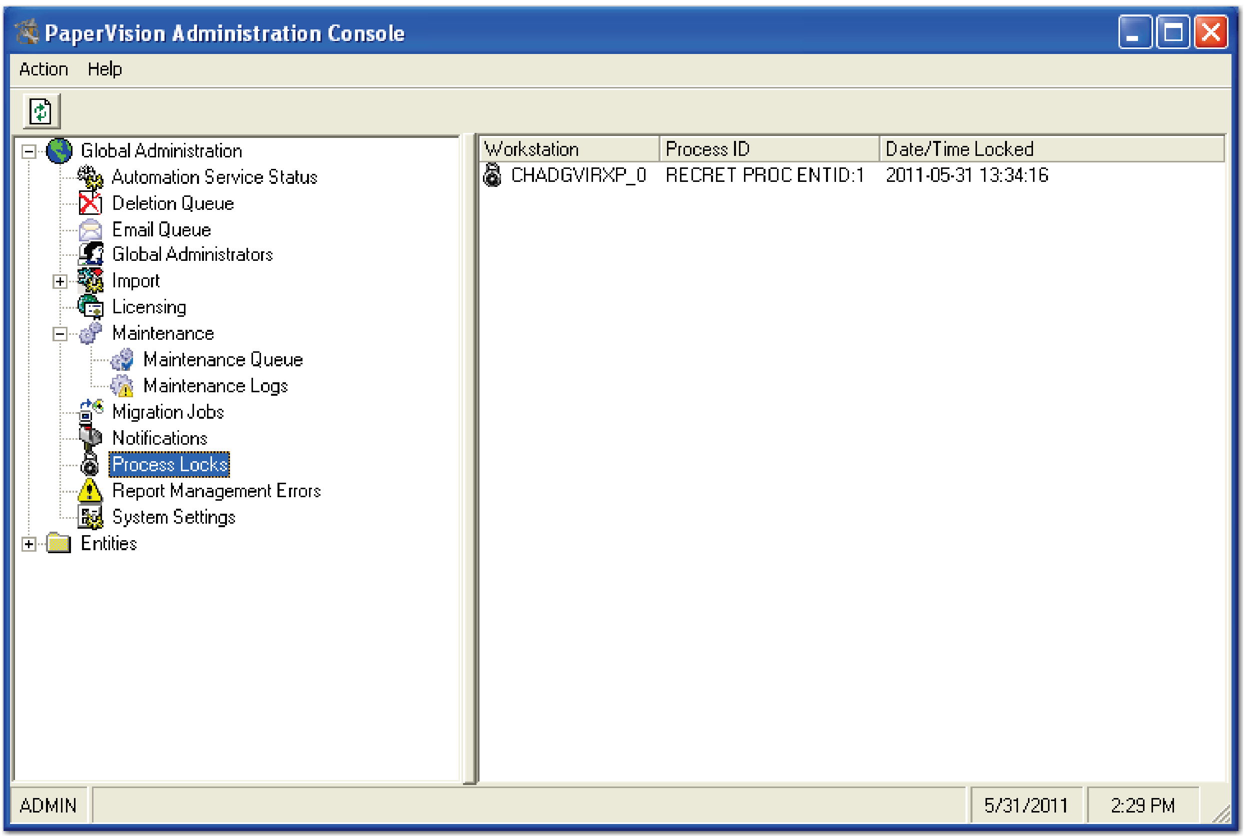
- A migration job was submitted
- A migration job has finished running
- A purge failed

Notifications are handled in the same way that they are handled for entities. For more information on working with notifications, refer to the **Current Activity – Notifications** section in the Entity Administration chapter.

Process Locks

Process locks prevent multiple systems from simultaneously processing the same task. When a system attempts to run a process, it creates a "lock" that prevents any other system from starting the same work. For example, when System A attempts to run a task that System B is currently processing, System A verifies that a process lock has not been placed before it sets its own lock.

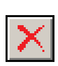
If a system encounters a failure during processing (i.e., power failure), the process lock may not be released. In this case, you may have to manually release or delete the lock. To view all process locks, select **Global Administration > Process Locks**.



Process Locks

Deleting a Process Lock

To delete a process lock:

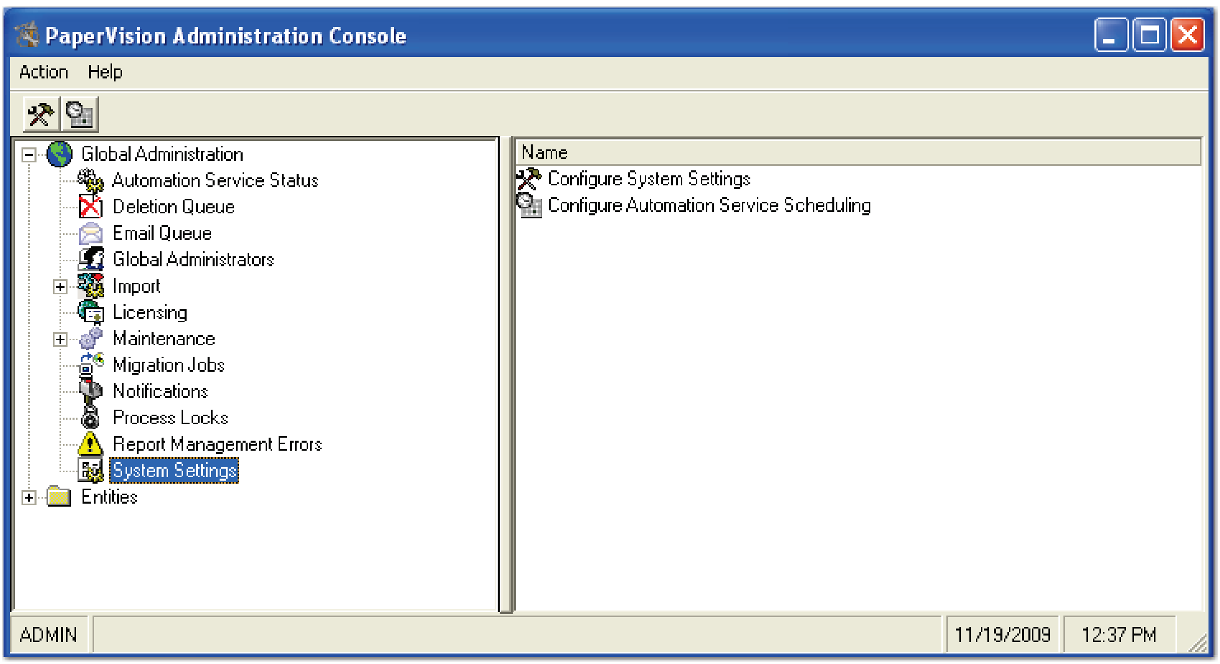
1. In the **Process Locks** screen, select the appropriate lock.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Report Management Errors

Global administrators can view report management errors for all report management jobs for all entities. They are handled in the same way that they are handled for entities. For more information on working with report management errors, refer to the **Report Management Errors** section in the Entity Administration chapter.

System Settings

System Settings configure certain aspects of the system's operation that are not specific to any particular entity. Local settings are specific to the computer they are set up on. In other words, if you are using multiple web or application servers, you would need to set up these settings on each server individually. Settings not marked as Local are globally distributed through the centralized database. To view the system settings, select **Global Administration > System Settings**.



System Settings

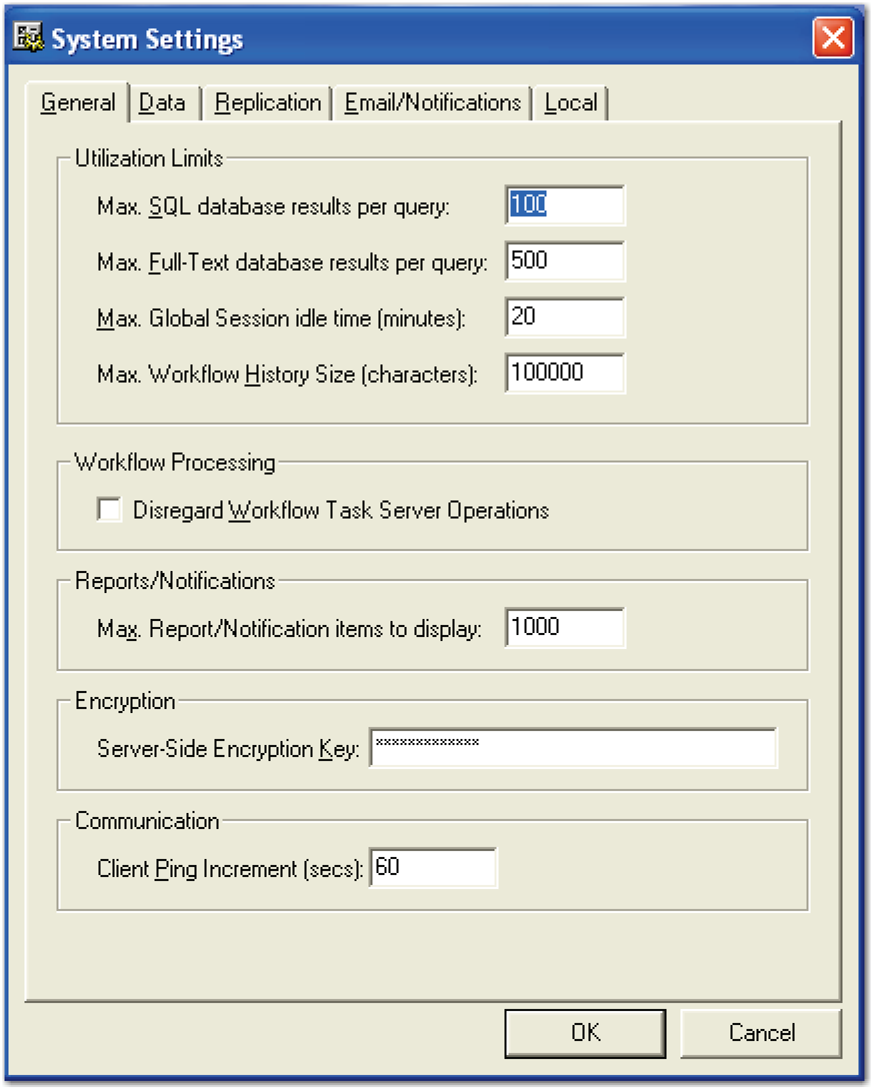
Configuring System Settings

To configure system settings:

1. Click the **Configure System Settings**  icon The **System Settings** dialog appears. The following sections describe the settings available for configuration in each tab.
2. Configure the system settings to your requirements, and then click **OK**. The system settings will take effect immediately.

System Settings - General

General System Settings allow you to configure the system's utilization limits, WorkFlow processing options, and the maximum number of reports/notifications to display. Additionally, you can assign the server-side encryption key and the client ping increment in the General tab.



System Settings – General

Max. SQL database results per query

This setting specifies the maximum number of results (individual documents) returned to a user during a search. As such, if a user has document grouping enabled, fewer documents may be returned since some of those documents may have been grouped together to appear as one. For more information, see **Appendix E – Frequently Asked Questions.**

Max. Full-Text database results per query

This setting specifies the maximum number of full-text search items returned by the full-text search engine. For more information, see **Appendix E – Frequently Asked Questions.**

Max. Global Session idle time (minutes)

This setting specifies the number of minutes that a user can sit idle before the automation service automatically kills the user session (logs the user out of the system). Each entity can have a customized setting for this setting in its general security policy. However, this global value (in General System Settings) determines the maximum value for each entity.

Max. WorkFlow History Size (characters)

This setting specifies the maximum WorkFlow history size (in characters) that a WorkFlow instance history can reach before an alert is generated. This setting helps you identify WorkFlows that erroneously loop through the same set of worksteps before they cause performance issues (i.e., on the database server).

Disregard WorkFlow Task Server Operations

When the server performs automated WorkFlow steps, certain types of tasks, namely Launch Application/Shell and Raise COM Events, could potentially pose security problems (for instance, a Launch operation that deletes files). For this reason, global administrators may want to prevent these types of operations from running on automation servers.

Max. Report/Notification items to display

This setting specifies the maximum number of records that can be returned in a report or notification listing, allowing you to ensure that a larger report or notification list does not overburden the database server.

Server-Side Encryption Key

This setting specifies the encryption key used to encrypt all server-side communications (i.e. Session ID’s). If you do not specify an encryption key, a default key is used. As such, it is strongly recommended that this value be specified.

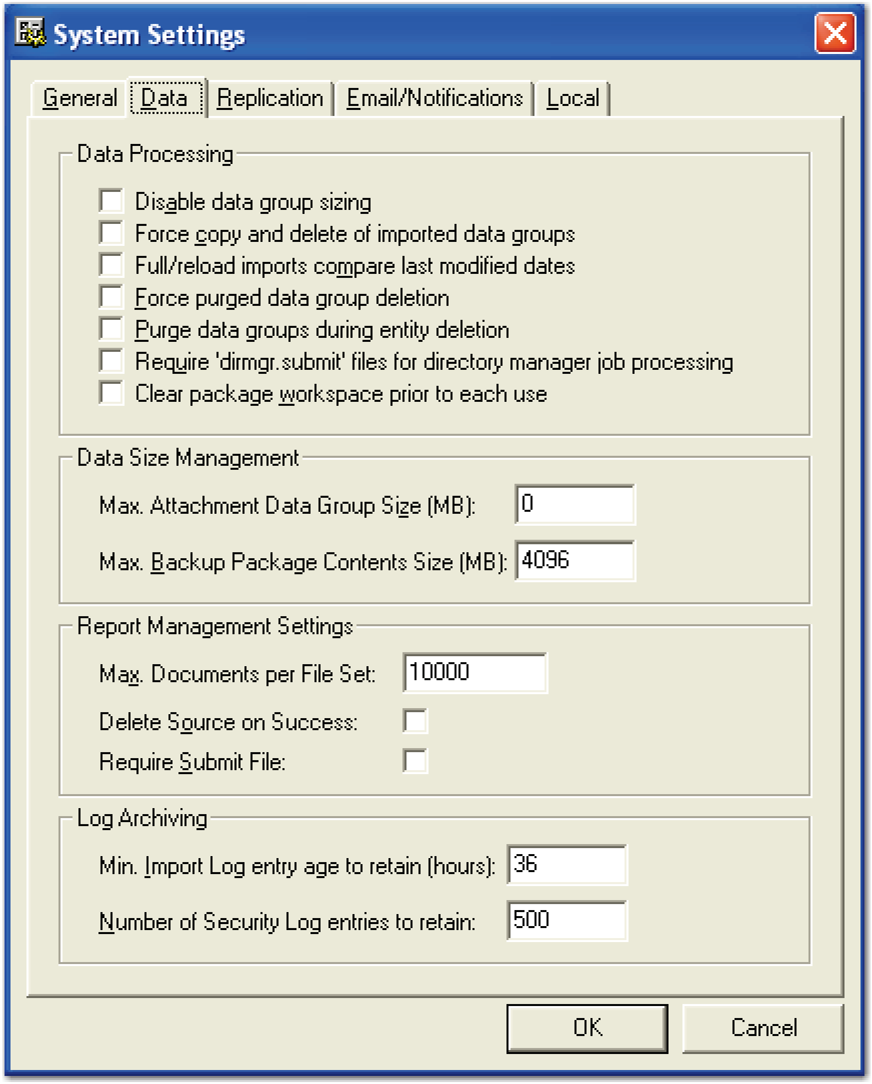
Client Ping Increment

If, during user login, a client application specifies that it is capable of "pinging" the server, the server will instruct the client application to send a keep-alive "ping" at this specified interval. This background "ping" is used to verify that the client application is still opened. If a client has not sent the expected "ping" within the 20 seconds of the specified ping interval, the session will be automatically terminated. Ping validation is useful in freeing up licenses used by applications that were closed without logging out the user. Without pinging, the session will not terminate until the session times out.

> **Note**:
>
> Some mobile browsers do not support background operations; as a result, the Client Ping Increment setting is not applicable to iPad devices. If you are using an iPad or Android device, the length of your session depends on the Max Session Idle Time value the system administrator assigned for the entity.

System Settings - Data

Data settings allow you to configure data processing, data size, Report Management, and log archiving options.



System Settings – Data

Disable data group sizing

As PaperVision Enterprise imports data groups, the system logs the amount of storage utilized by the data group. Although this process can be time-consuming for large data groups, it provides valuable information to administrators who manage storage resources.

Force copy and delete of imported data groups

This setting overrides the entity level (and manual) settings for **Copy data groups during import** and **Delete source data group after copy**. The global administrator can ensure that all documents are stored in their appropriate location. This setting can be particularly useful in situations where the data groups are being imported from an FTP site.

Full/reload imports compare last modified dates

If this setting is enabled, full/reload imports compare a data group's main database/XML (i.e. DATAGRP.MDB) file's last modified date to the last modified date from the same data group's previous import. If the file has not been modified, then import is skipped. Disabling this setting causes the modification date comparison to only be used when performing an append import.

> **Note**:
>
> Performing a manual full/reload import of a data group with the **Import Immediately** option selected will ignore this setting and force the data group to be imported, regardless of the file modification date.

Force purged data group deletion

When a data group is purged from PaperVision Enterprise, depending on its **Read/Write** state, its files may or may not be physically removed from the source media. This option ensures that the files are always removed from the source media regardless of the **Read/Write** state of the data group.

Purge data groups during entity deletion

When an entity is deleted, this option will cause any data groups with the Read/Write state enabled to be automatically submitted for purging.

Require 'dirmgr.submit' files for directory manager job processing

When a directory manager job runs, it typically will attempt to import files that meet the job requirements. This could potentially cause issues if a directory manager job starts running while files are still being transmitted. Selecting this option causes each job to run only when a file called 'dirmgr.submit' (or '<packagefilename> .submit') is located in the root of the job's path. The contents of this file are not important; in fact the file can be completely blank as it is not imported as part of the job.

Clear package workspace prior to each use

This setting causes the package workspace to be cleared prior to importing a data group from a package file, running a backup job, or running a directory manager job. This is particularly useful when an administrator is encountering failures on these types of operations that are leaving the failed data in the package workspace.

Max. Attachment Data Group Size (MB)

This setting specifies the maximum size (in MB) of an attachment data group before a new one is automatically created. If this value is zero, no size limit is enforced.

Max. Backup Package Content Size (MB)

This setting specifies the maximum size (in MB) of content data placed into a backup package during a project-level backup. Once the maximum size is reached, a new package file is created.

> **Note**:
>
> This setting does not specify the size of the package file, but the size of its contents.

Max. Documents per File Set

As the Report Management engine creates file sets, it can limit the number of documents contained in each. This setting allows you to limit the number of documents that are processed before they are imported for retrieval. In certain instances (where detail field data is being extracted), this number may be exceeded in order for all of a given document's detail information to be written to the same file set.

Delete Source on Success

This setting causes the source file to be deleted when it is successfully parsed through the report management engine. Otherwise, it will be moved to the **Local Output Destination\ Successfully Processed** directory.

Require Submit File

This setting specifies that the report management engine only process files containing a corresponding file name and a .SUBMIT extension (e.g., a file named "test.txt" would also need a "test.txt.submit" file). This allows the main file to be sent to the job's Input Path, but it will not be parsed until after the submit file is also delivered, keeping the main file from being processed before it has been completely transferred. The contents of the .SUBMIT file are irrelevant and the file can be empty.

Min. Import Log entry age to retain (hours)

As import logs are archived, database records are removed and placed into a textual XML document. These records, in effect, become unsearchable from within the PaperVision Enterprise system (but the data can be mined in a separate application). As such, it may be desirable to leave the most recent records in the database in order to review the import status.

Number of Security Log Entries to retain

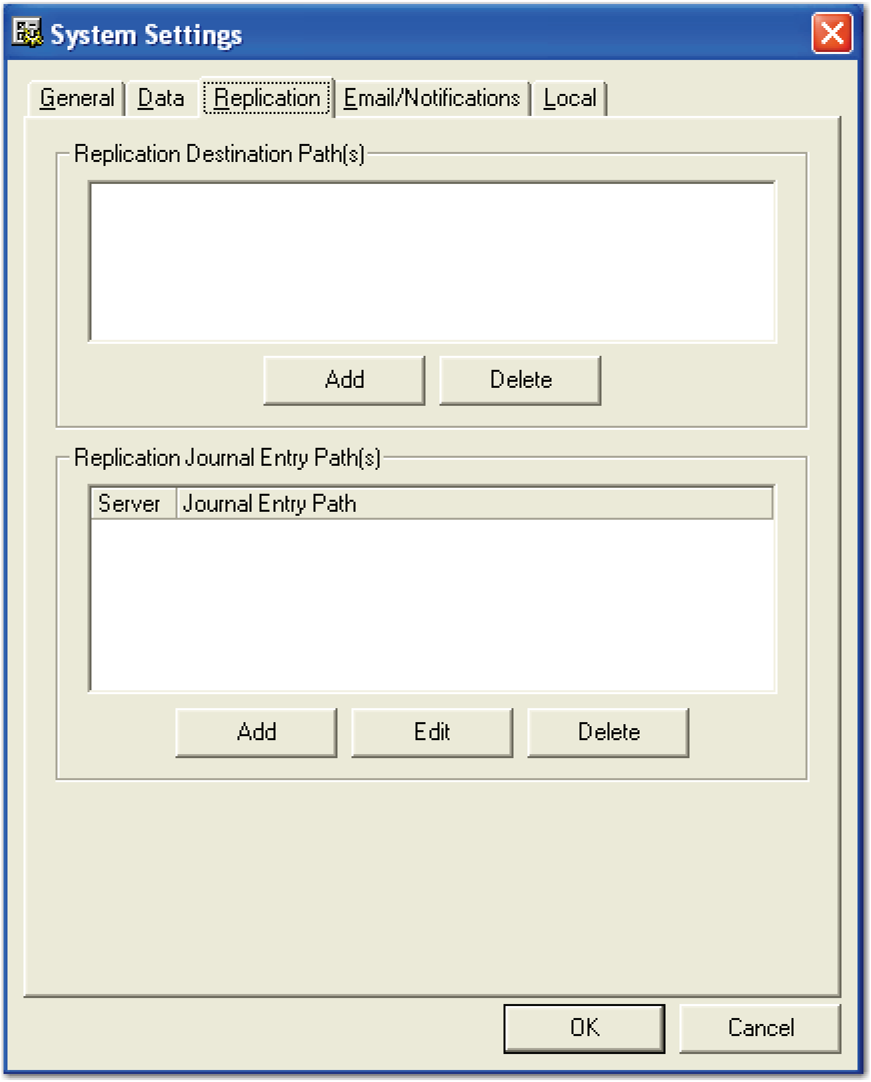
As security logs are archived, database records are removed and placed into a textual XML document. These records, in effect, become unsearchable from within the PaperVision Enterprise system (but the data can be mined in a separate application). As such, it may be desirable to leave a certain number of records. Your specified number of entries will be retained in the database.

System Settings - Replication

PaperVision Enterprise can perform file replication on documents and full-text data in the system. Replication capabilities are included as a core component of PaperVision Enterprise. File replication allows all changes to the document files and full text databases to be replicated to another server and/or site for backup and high-availability applications. You can replicate your data to as many separate locations as necessary, either locally or across WAN connections to separate sites.

PaperVision Enterprise performs replication through a journaling system. When a system attaches a new document, checks in a new document version, deletes a document, imports data groups, purges data groups, or deletes projects, the system checks whether a Replication Journal Entry Path has been defined. If so, it will write a journal entry (a specially formatted text file) to that location, specifying the type of operation that was performed and the files or directories that it was performed on.

The actual replication process takes place on a machine (or multiple machines) running as a PaperVision automation server with the **File Replication** automated process setting configured. This server will attempt to access all of the Replication Journal Entry Paths. It will create a list of all of the journal entries that have been entered and then sort them by date/time created. Once sorted, each entry will be processed, replicating the same operation to all of the defined **Replication Destination Paths**. If an error occurs during a replication, an error entry is written to the journal file specifying the operation and line where the error occurred, the file is renamed to keep it from accidentally being processed again, and a copy of the journal file is made to the local machine (in the Digitech Systems\Common Files\JournalErrors directory where PaperVision Enterprise was installed). Once the error has been resolved, you can simply rename the file, removing the .ERROR extension, to have the file re-processed.



System Settings – Replication

Replication Destination Path(s)

When the replication process takes place on the PaperVision Enterprise automation server, files are replicated to these specified locations.

> **Note**:
>
> It is highly recommended to specify UNC paths and ensure that the service account used on the automation server has full read/write access to the shares.

Replication Journal Entry Path(s)

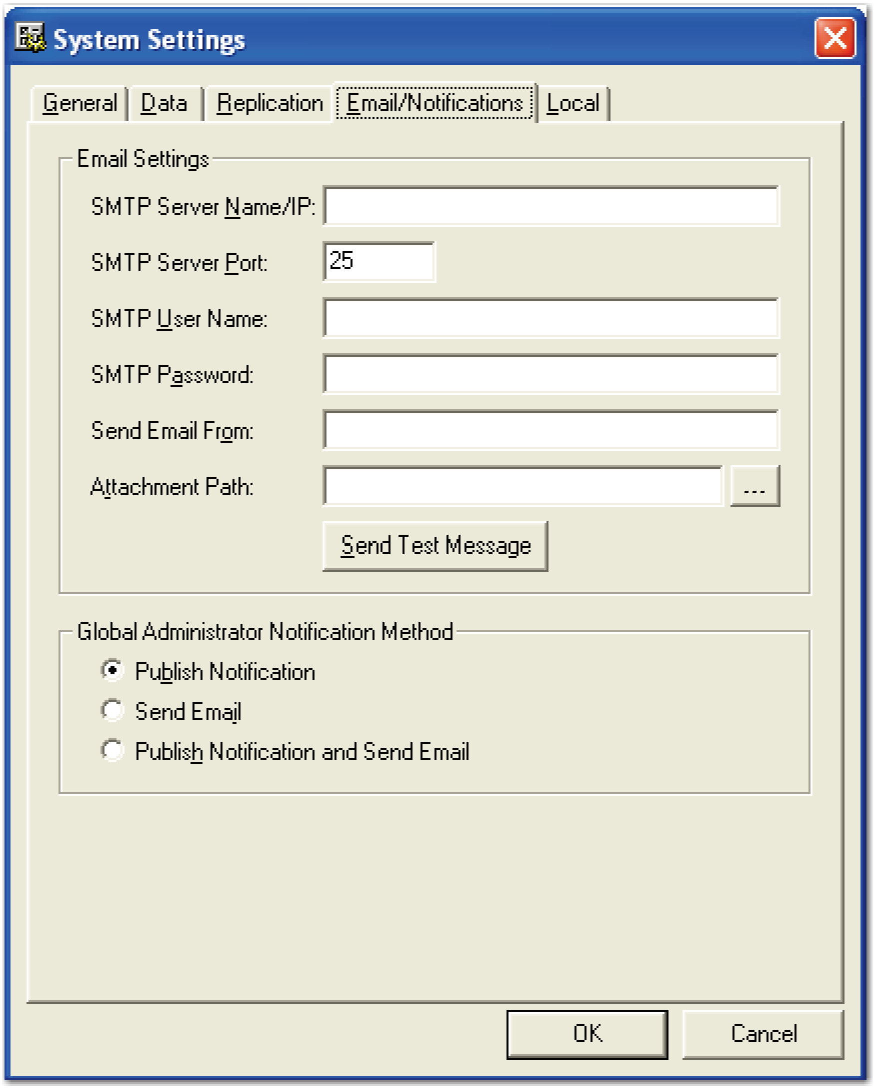
Each server that will perform any operation that requires a replication journal entry will need a specified **Replication Journal Entry Path.**

> **Note**:
>
> It is highly recommended to specify UNC paths and ensure that the service account used on the automation server that will perform the replications has full read/write access to the shares.

This location does not need to be unique to each server. However, using separate, local, shares on each server will not lose replication data if the server holding the replication journals becomes unavailable.

System Settings - Email/Notifications

These settings allow you to configure email settings and how notifications are relayed to the global administrator.



System Settings – Email/Notifications

SMTP Server Name/IP

This setting specifies the SMTP server name or IP address that is to be used when sending emails from within the system.

SMTP Server Port

This setting specifies the port number to be used to communicate with the specified SMTP server (default is 25).

SMTP User Name

If the specified SMTP server requires authentication prior to sending an email, provide a valid user name.

SMTP Password

If the specified SMTP server requires authentication prior to sending an email, provide the appropriate password.

Send Email From

This setting specifies the email address from which automated emails are sent. Examples of valid addresses include:

- "Friendly Name" <address@company.com>
- address@company.com

Send Test Message

When enabled, a test message is sent to an email address to verify the settings are correct.

Attachment Path

This path is used by the automated email engine to temporarily store email attachments until the email is actually sent. This path should be accessible from all PaperVision Enterprise servers processing (sending) and generating (i.e., through automated WorkFlow tasks) emails.

> **Note**:
>
> If Email Queue items are deleted (either via sending the email or deleting them manually), their attachments are removed from the Attachment Path.

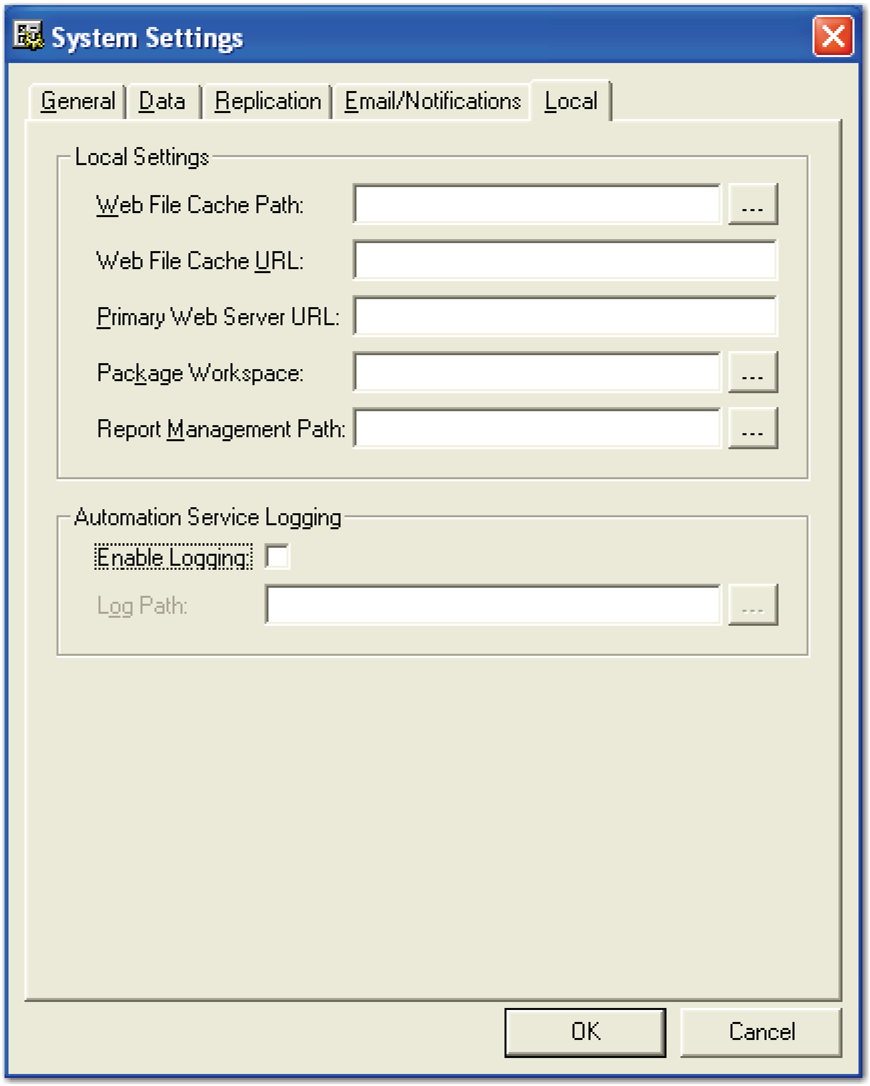
Global Administrator Notification Method

Notifications can be received in one of three manners:

- **Publish Notification**: Notifications are published into the PaperVision database and accessed via the Administration Console.
- **Send Email**: Notifications are sent via email to the global administrator’s email address.
- **Publish Notification and Send Email**: Both of the above listed options are used for each notification.

System Settings - Local

Local settings are specific to the local machine on which they are configured. If multiple application servers or automation servers are installed, the local settings must be configured for each server.



System Settings – Local

Web File Cache Path

This setting specifies the full path to the location that files are to be physically cached to when retrieved. If you are using multiple web servers, it is not necessary to specify unique cache settings for each - you can use identical cache settings (all pointing at the same network share).

PaperVision Enterprise also provides additional high-availability features for this setting which allow you to enter multiple paths, separated by a pipe character ("|"). If the first location specified is not accessible, the server moves the inaccessible path to the end of the list and tries the next path listed. This process is repeated until either the server can cache the file to one of the specified cache paths or the server determines that none of the cache paths are accessible.

Web File Cache URL

This setting identifies the URL to the physical location specified by the **Web File Cache Path** value. If you are using multiple paths, you must specify the exact same number of URLs separated by a pipe character ("|").

Primary Web Server URL

This setting specifies the URL that is used to access the PaperVision.net Enterprise application. If blank, PaperVision Enterprise will use the URL of the incoming request. However, if you are using non-standard ports or placing the web servers behind a load balancer, it is required that you specify a value in this field.

Package Workspace

As PaperVision Enterprise creates backup packages for backup jobs or imports package files, it needs a temporary location where the package file can be placed and, if necessary, the contents can be extracted. This allows you to specify that location. This location should contain ample space to temporarily hold any package file that is being worked on and all of the extracted contents of any package file that is being imported.

Report Management Path

As files are parsed in the report management engine, the file sets that are created (along with temporary cache files) are written to this path. Once the file set is completed, it is copied into a data group and removed from this location. Furthermore, files that have been processed are copied to their "Successfully Processed" or "Failed to Process" directories under this path.

Automation Service Logging – Enable Logging

This setting enables the automation service logging, which provides data used in troubleshooting processes carried out by the automation service.

> **IMPORTANT**!
>
> To support the ISO 8601 international date format, many functions in PaperVision Enterprise may now display dates and times using the "yyyy-mm-dd hh:nn:ss" format.

Log Path

This setting specifies the path where the log files are written.

Automation Service Scheduling

PaperVision Enterprise provides automation services that automate the execution of a number of operations. Operations can be scheduled to repeat in any of the following manners:

- every x minutes
- every x hours
- every x days
- every x weeks on specific days of the week
- on specific days of the month

> **IMPORTANT!**
>
> To support the ISO 8601 international date format, many functions in PaperVision Enterprise may now display dates and times using the "yyyy-mm-dd hh:nn:ss" format.

Below is a list of the operations that are available for execution:

Backup Processing

This operation performs any backup jobs whose **Next Run Time** value is less than or equal to the current date and time.

Deletion Queue

This operation performs deletions specified in the Deletion Queue that were submitted by data group purges.

Directory Manager Jobs

This operation processes any defined Directory Manager Jobs that are marked as **Active**.

Email Queue

When email notifications are sent, they are placed into a holding queue and then processed by the automation service (to perform the actual sending of the email). This operation causes the email holding queue to be processed/sent.

File Replication

This operation performs the replication for any journal entries in all of the **Replication Journal Entry Paths** to all of the specified **Replication Destination Paths**.

Full-Text Index Compression

When documents or data groups are deleted that have data in the full-text database, their information is also deleted from the full-text database. When that information is removed, however, the disk space used by those documents in the full-text database is not recovered. This operation compresses the full-text database indexes, regaining the lost space.

> **Note**:
>
> It is not recommended to perform this operation regularly as it places a significant processing load on the server.

Full-Text Replication

This operation automatically replicates all full-text databases to all specified **Replication Destination Paths**.

Import Queue

This operation imports data groups listed in the **Import Queue** that have a **Workstation** value that matches the computer's name.

Maintenance Queue

This operation processes any maintenance jobs listed in the **Maintenance Queue**.

Monitored Import Paths

This operation checks all of the items in the **Monitored Import Paths** list that have a **Workstation** value that matches the computer's name. If any data groups are found in those paths, they are automatically imported.

Monitored Import Paths (Submit)

This operation checks all of the items in the **Monitored Import Paths** list that have a **Workstation** value that matches the computer's name. If any data groups are found in those paths, they are submitted to be imported. This is designed to minimize the network and storage system impact imposed by having a large number of automation servers searching paths for data groups to import.

Records Retention

This operation processes the active records retention policy set for each project of each entity by properly applying the retention (lock) date/time and/or destruction (deletion) date/time to the appropriate documents. If a policy set exists for a project, the document destruction (deletion) date/times will be evaluated against the current date/time, deleting the appropriate documents which are not marked for retention (locked).

Report Archiving

This operation will automatically archive the **Document Access** and **System Operations** reports. All entries from these reports will be archived unless the **Leave the last X entries in the system value** is set. It will also archive the Import Log entries. All entries older than the value specified in **Leave entries for the last X hours in the system** will be archived.

Report Management

This operation processes the configured, active Report Management jobs.

Session/Grant Cleanup

This operation removes sessions that have remained idle longer than the specified **Max Session Idle Time** value. This operation also removes document grants that have expired.

Storage Utilization Snapshots

This operation takes a reading of all of the storage in use by each entity and records that value. Each snapshot represents a Sample in the entity's utilization report.

WorkFlow (Automated)

This operation takes ownership of worksteps, and then completes worksteps in any WorkFlows that have a participant marked as <Automated>.

WorkFlow (Max Times)

This operation processes all active worksteps with expired time limits, sends the appropriate notifications, and transitions to new worksteps as defined.

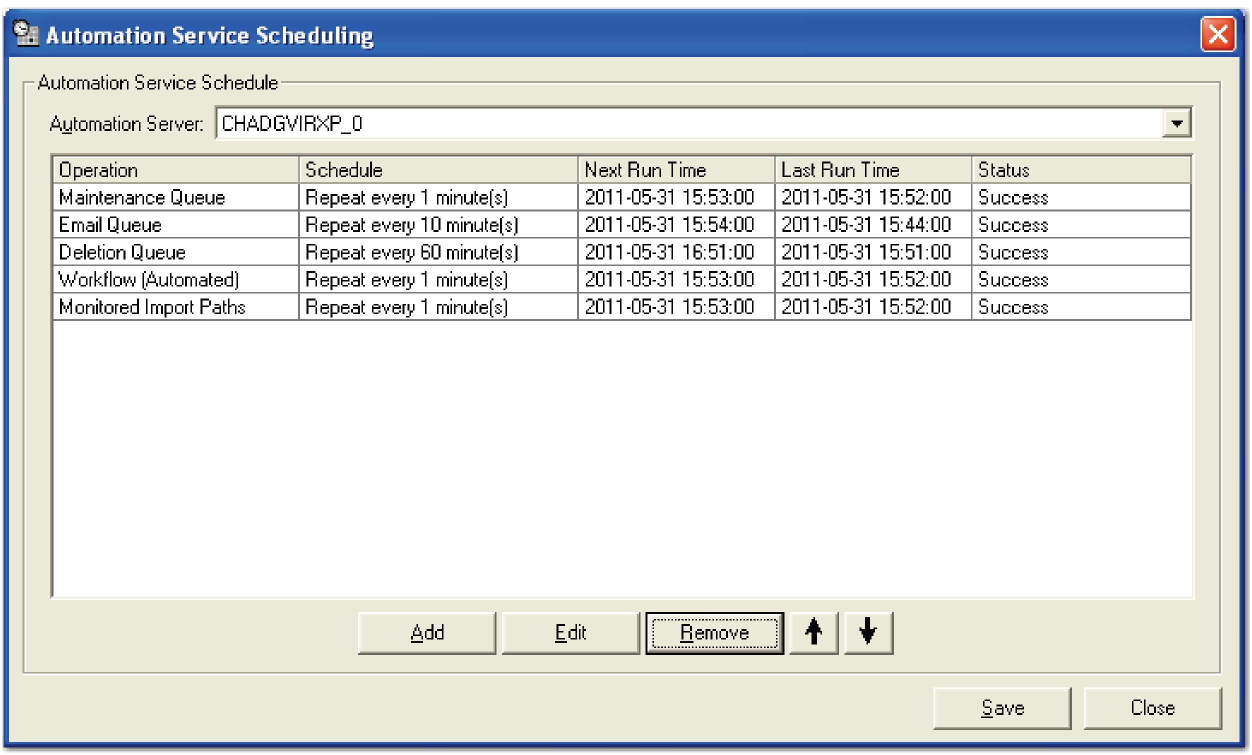
WorkFlow (Pre-Conditions)

When this operation executes, it looks for any pre-conditions defined with the "Criteria Only" Document Selection Method. If any documents meet the criteria, the WorkFlow instance is created and the document is marked so that WorkFlow definitions will no longer be processed against the document. The mark on the document is removed when an index field marked as a "WorkFlow Trigger" is modified. This feature is particularly useful for allowing an index field to act as a date that triggers a WorkFlow instance for a document.

Configuring Automation Service Scheduling

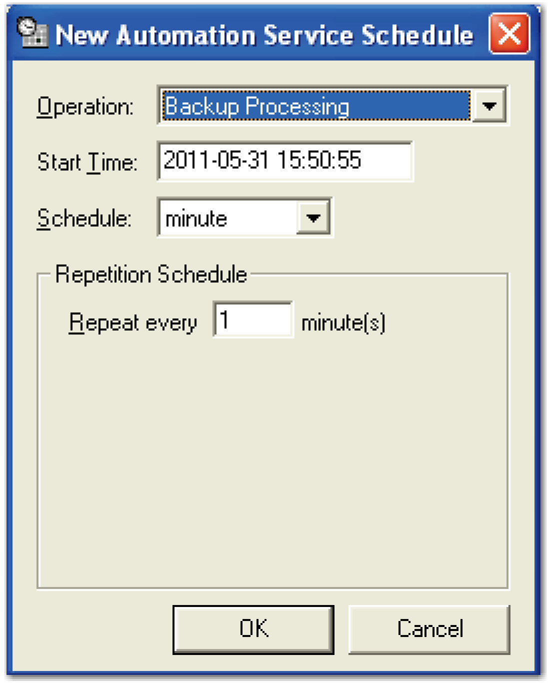
To configure automation service scheduling:

1. Select **Global Administration > System Settings**.
2. In the **System Settings** screen, click the **Configure Automation Service Scheduling**  icon. The **Automation Service Scheduling** dialog box appears.



Automation Service Scheduling

3. To add a new operation to the schedule, click **Add**. The **New Automation Service Schedule** dialog box appears.



New Automation Service Schedule

4. Select the desired **Operation**, **Start Time**, and **Schedule**.
5. Select **OK**.
6. To edit or remove an existing operation, highlight the desired operation and select the corresponding **Edit** or **Remove** button.
7. When the automation service processes items, it checks the current and compares it to the listed **Next Run Time**. If the **Next Run Time** has been reached, it performs the operation and then sets the time for the next run. You can change the order that operations are evaluated by highlighting the desired operation(s) and selecting the corresponding up  or down  buttons.
8. When the schedule is configured as desired, select **Save**. The new automation service schedule will take effect immediately.

Chapter 3 – Entity Configuration

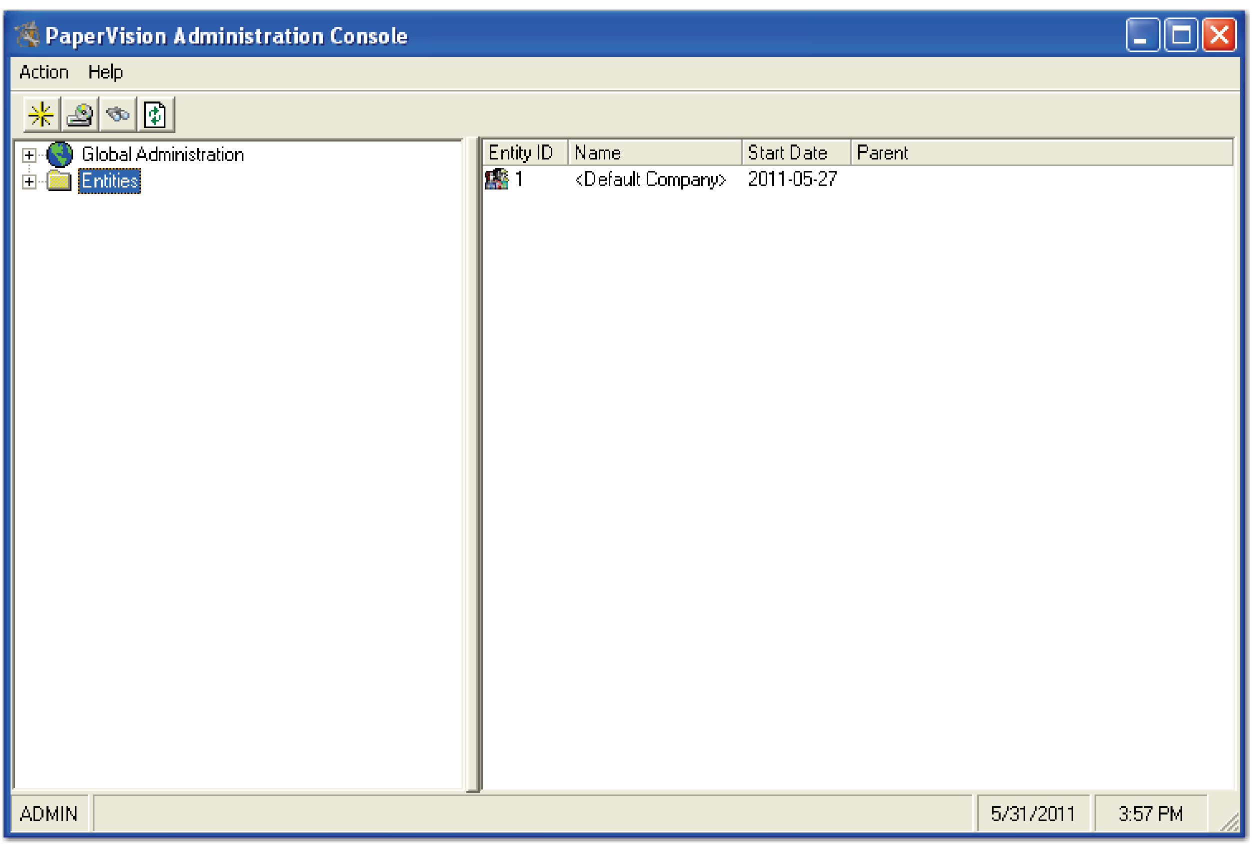
An entity is a body (e.g. a corporation or organization) that provides its own administration. Only global and system administrators can configure an entity's properties. Each entity contains its own projects (groups of similarly-categorized documents) users, groups, WorkFlows, security policies, etc. No information is shared among entities.

In general, most PaperVision Enterprise installations, including large enterprise installations, will not need more than one entity.

The need for multiple entities can arise in specific circumstances:

- In a hosting environment where an on-demand provider is hosting data for multiple companies and each company wants to be able to administrate itself and its users
- In a large enterprise that has different departments or cost centers that want the ability to administrate themselves (separately from other departments) without having to involve a central IT organization

The only reason to create a separate entity would be to administrate the entities completely separate from each other. This has nothing to do with limiting access to specific projects, functionality, or documents – all of that can be done within a single entity. To view the entity list, select the **Entities** folder.



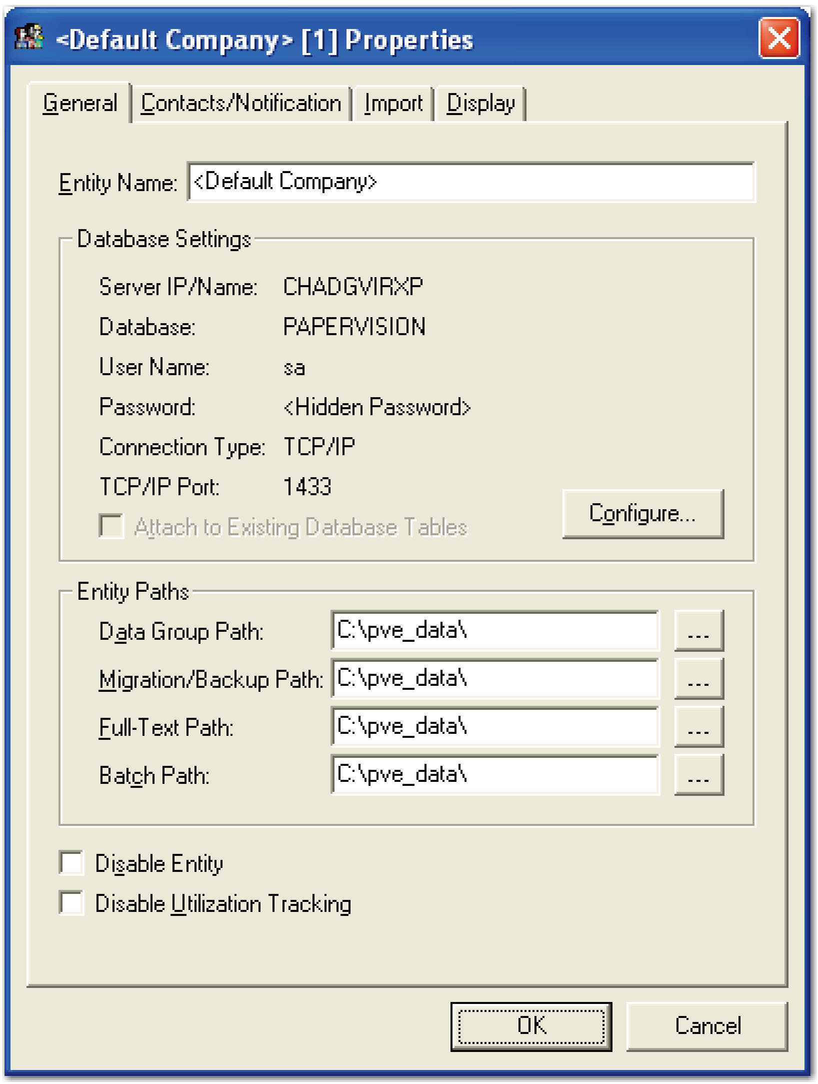
Entities

Entity Properties

Entity properties dictate how the server handles system-level functions relating to that entity. As such, configuring entity properties, as well as the ability to create, edit, and delete entities is limited to global administrators. To view an entity's properties, select the entity in the list, and then click the **Properties**  icon.

Entity Properties – General

General entity properties include the entity name, database settings, entity paths, and options to disable the entity and utilization tracking.



Entity Properties – General

Entity Name

The Entity Name specifies the name of your company or organization.

Database Settings

These settings display the configuration settings for the database where the entity resides. Only under special circumstances (i.e. moved the database to a different server), should these settings ever be changed once the entity is created. Changing these settings to another database or server for an existing entity will not create new entity tables. The server will expect them to already exist.

Attach to Existing Database Tables

This setting specifies to prompt for the new Entity ID (rather than have it automatically generated) so that existing database tables (with the provided Entity ID in their name) can be used. This is useful in scenarios where an entity's tables exist in a restored database (separate from the PaperVision Enterprise system tables).

Data Group Path

As PaperVision Enterprise imports data groups (sets of data), it can optionally copy the data groups from their source location to a new location. This path specifies the location where data groups are to be copied in that case. This path also specifies where new (attached) documents and new document versions are to be written to.

Migration/Backup Path

This setting specifies the path where migration jobs or backup packages are processed.

Full-Text Path

This setting specifies the path where full-text database indexes are stored.

Batch Path

This setting specifies the path where batches created by the PaperVision Capture product are stored.

Disable Entity

Disabling an entity prevents any users (including administrators) from logging into the system.

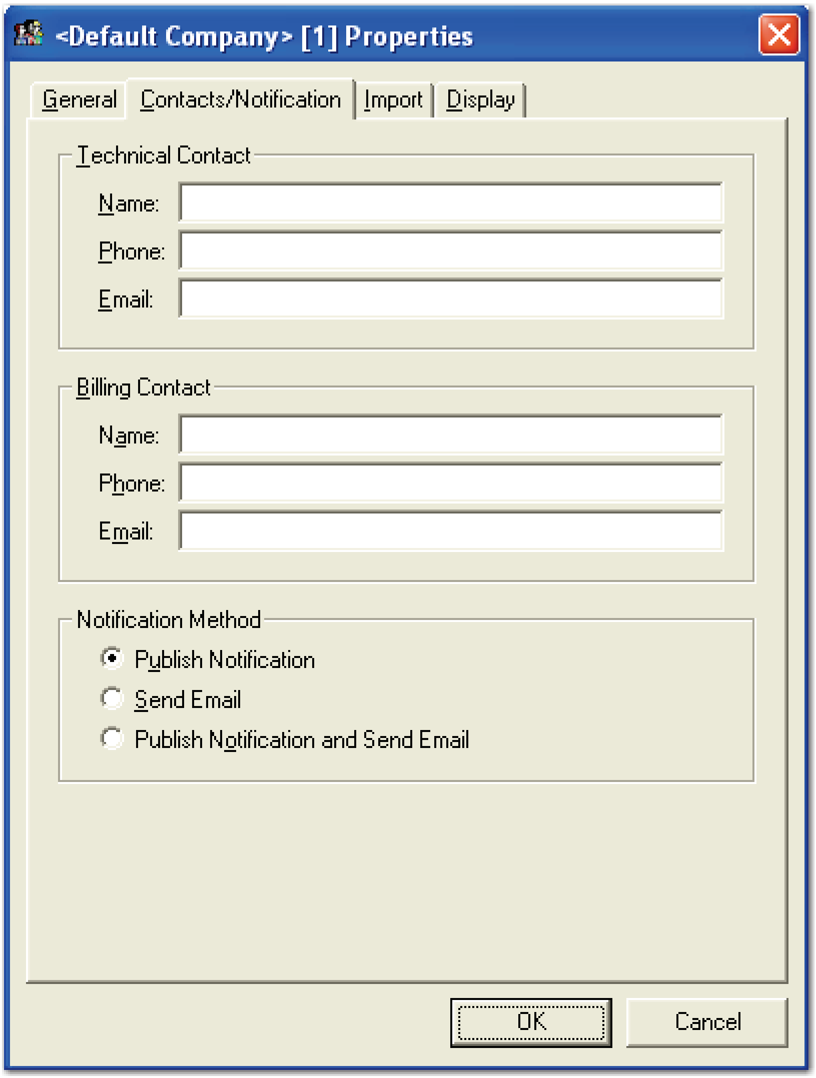
Disable Utilization Tracking

By default, every user operation within PaperVision Enterprise is tracked to allow administrators to perform security audits and utilization reports. Enabling this setting causes PaperVision Enterprise to skip utilization tracking for each operation.

> **Note**:
>
> The data group, migration/backup, full-text, and batch paths do not need to be unique, nor do they need to be unique amongst multiple entities. However, when PaperVision Enterprise takes a storage utilization snapshot, it will evaluate the size of the entire contents of the Data Group, Batch and Full-Text Paths separately. If any of these paths are identical, incorrect utilization calculations may result as the contents of the same directory are evaluated multiple times.

Entity Properties - Contacts/Notification

You can specify the technical and billing contacts for the entity and select the method in which notifications are sent to users.



Entity Properties – Contacts/Notification

Technical and Billing Contacts (Name, Phone, and Email)

For informational purposes only, you can enter the technical and billing contacts' names, phone numbers, and email addresses for this entity.

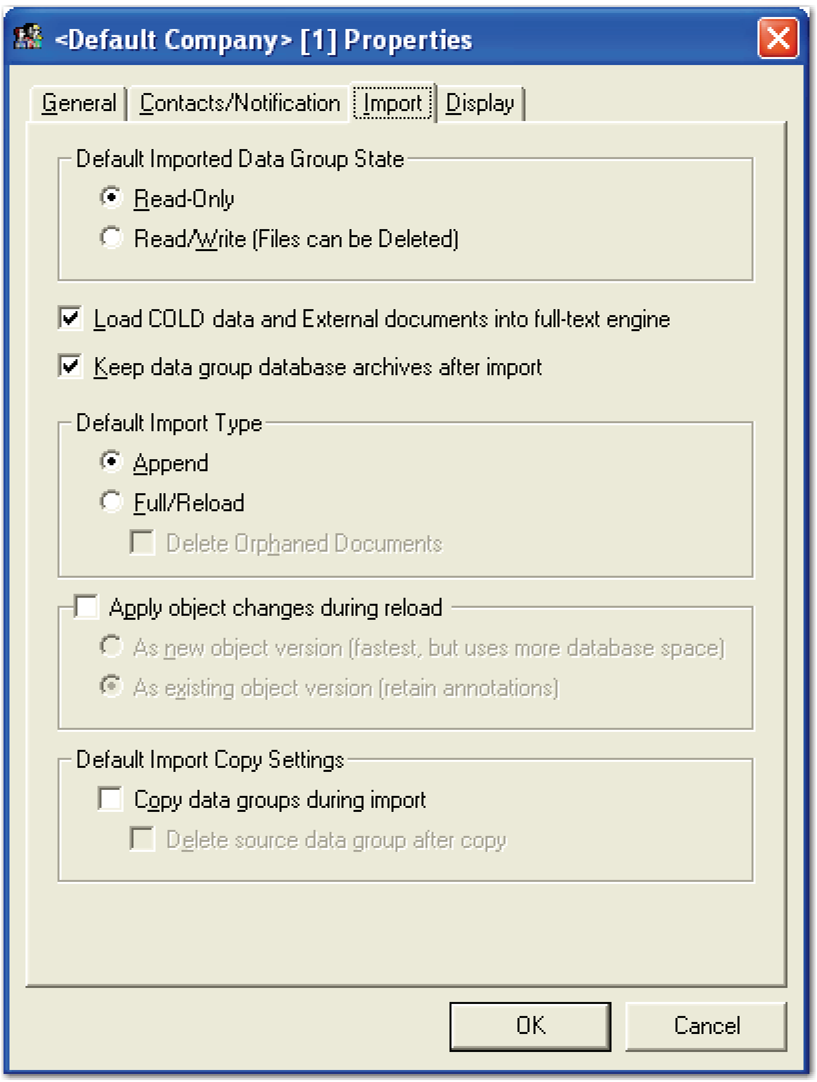
Notification Method

Users can receive notifications in one of three manners:

- **Publish Notification**: Notifications are published into the PaperVision Enterprise database and accessed via the Administration Console or a PaperVision Enterprise client application.
- **Send Email**: Notifications are sent via email to the user's email address.
- **Publish Notification and Send Email**: Both of the previous options are used for each notification.

Entity Properties - Import

Import settings allow you to configure how data groups are imported into PaperVision Enterprise.



Entity Properties – Import

Default Imported Data Group State

This setting determines whether an imported data group will be marked as read-only or read/write. This setting can be changed at a later time for each data group. If a data group is marked as read/write, when a document is deleted from PaperVision Enterprise, the files will be physically deleted from their source data group. Otherwise, only the reference pointers to that document are deleted from the PaperVision Enterprise database (no files are deleted).

Load COLD data and External documents into full-text engine

This setting specifies that COLD data and external documents (such as MS Word files) will become full-text searchable when they are imported or added to the system.

Keep data group database archives after import

As a data group is imported, a copy of the data group database is made with a date and time stamp in the same directory where the data group resides. These copies can be used to roll-back to an old version of the data group database if it has been updated/appended over time (by adding additional documents from another application).

Default Import Type

As data groups are imported, PaperVision Enterprise checks whether a data group was previously imported. If so, this setting specifies whether PaperVision Enterprise will import the new documents that have been added to the data group (Append), or overwrite the existing documents (Full/Reload).

> **Note**:
>
> The Full/Reload import type will not delete any documents that were deleted from the data group by another application. To delete all documents for a data group, you must purge the data group.
>
> Additionally, this property does not apply to PVERM (PaperVision Enterprise Report Management) Data Groups, as they only support "Append" import types.

Delete Orphaned Documents

This setting causes a Full/Reload import to compare the list of documents that exists in the source data group with the list of documents that exists in PaperVision Enterprise from that data group. Any documents that no longer exist in the source data group (i.e. were deleted after an earlier import), but still exist in PaperVision Enterprise, will be removed from PaperVision Enterprise.

> **Note**:
>
> This property does not apply to PVERM (PaperVision Enterprise Report Management) Data Groups.

Apply object changes during reload

During a Full/Reload import, PaperVision Enterprise updates the document index values for existing documents. After updating the index values, it can either leave the document objects (pages and pointers to document files) as they are (with this option not selected) or it can update the existing document's pages in one of two ways:

1. **As new object version** creates a new version of the object with the updated page and pointer information from the data group. Any annotations that have been applied to the imported documents will be lost since this is a new version.
2. **As existing object version** updates the existing version of the object with the new page and pointer information from the data group. Then, it shuffles any annotations that may have been moved due to page insertions or deletions into the appropriate location within the document. Keep in mind that annotations cannot be shuffled (and hence may be on incorrect pages) when using this option during the import of ScanTRAX data groups, multi-page TIFFs, and DataFlow COLD data groups. Use of this option may increase the amount of time needed to perform the import if a significant number of documents being imported have already been annotated within PaperVision Enterprise.

Copy data groups during import

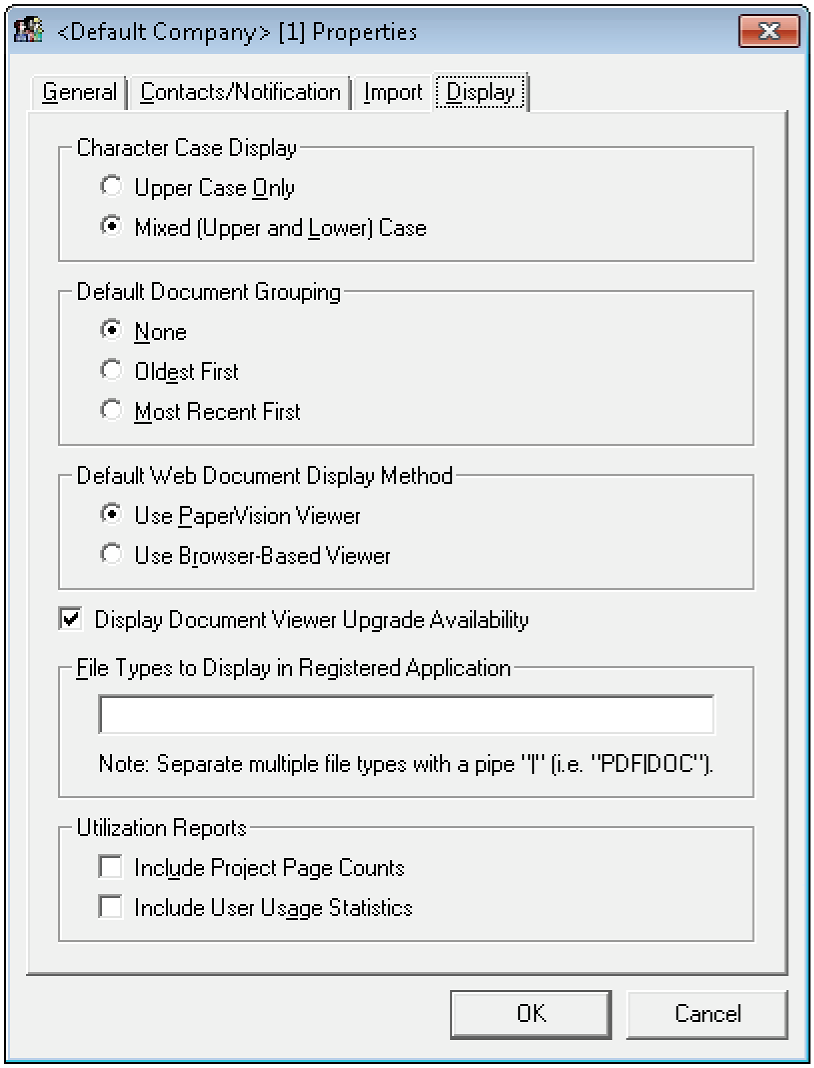
If you enable this setting, PaperVision Enterprise copies the entire contents of the data group to a location in the Data Group Path (as described earlier) and subsequently retrieves all documents from that copied location.

Delete source data group after copy

If you enable this setting, PaperVision Enterprise deletes the imported data group from its source location after a data group is copied and the entire import is performed.

Entity Properties - Display

Display properties allow you to configure how characters and documents appear in the PaperVision Enterprise Web Client. You can also select how web documents are displayed and whether to display available upgrades for the PaperVision ActiveX Document Viewer. Lastly, you can select the type of information that appears in utilization reports.



Entity Properties – Display

Character Case Display

This setting determines whether PaperVision Enterprise will display all project names, index fields, and index values in upper-case or mixed-case.

Default Document Grouping

PaperVision Enterprise offers users the ability to view multiple documents that have the same index values as a single document. This is particularly useful in cases where additional information may be added to the system at a date later than the original information. Default Document Grouping specifies the default value the user will utilize in determining how (if at all) those documents are grouped:

- **None** (documents will not be grouped by default)
- **Oldest First** (by default, documents will be grouped with the oldest documents at the beginning pages)
- **Most Recent First** (by default, documents will be grouped with the newest documents at the beginning pages)

Default Web Document Display Method

This setting specifies whether new users' default document display method use the PaperVision Viewer or the Browser-Based Viewer.

> **Note**:
>
> This setting is overridden by the **Require Web Clients to use the Browser Plug-in** security policy setting. In other words, if the security policy setting is enabled, then the **Default Web Document Display Method** will always force the user to view documents with the browser plug-in.

Display Document Viewer Upgrade Availability

This setting specifies whether a notification appears for web users when they attempt to first view a document or WorkFlow when the PaperVision ActiveX Document Viewer plug-in is not running the latest version.

File Types to Display in Registered Application

This setting specifies that files with these extensions will automatically be viewed within their registered applications (rather than rendering them through PaperVision Enterprise). This is particularly useful in environments that utilize proprietary file formats or file formats not supported by PaperVision Enterprise. You can specify multiple file extensions by separating them with the pipe ("|") character.

> **IMPORTANT SECURITY NOTE**:
>
> Any files opened in these applications will be subject to the functions available in those applications. For example, if users open a PDF file in Adobe Acrobat®, they will be able to print those files, regardless of their security rights assigned within that project.

Utilization Reports – Include Project Page Counts

This setting specifies that the utilization reports calculate the number of pages in each project and include this data in the report.

> **Note**:
>
> Enabling this option may cause utilization reports to take much longer to run.

Utilization Reports – Include User Usage Statistics

This setting specifies that the utilization reports should calculate usage statistics for each user and include this data in the report.

> **Note**:
>
> Enabling this option may cause utilization reports to take much longer to run.

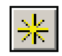
Working with Entities

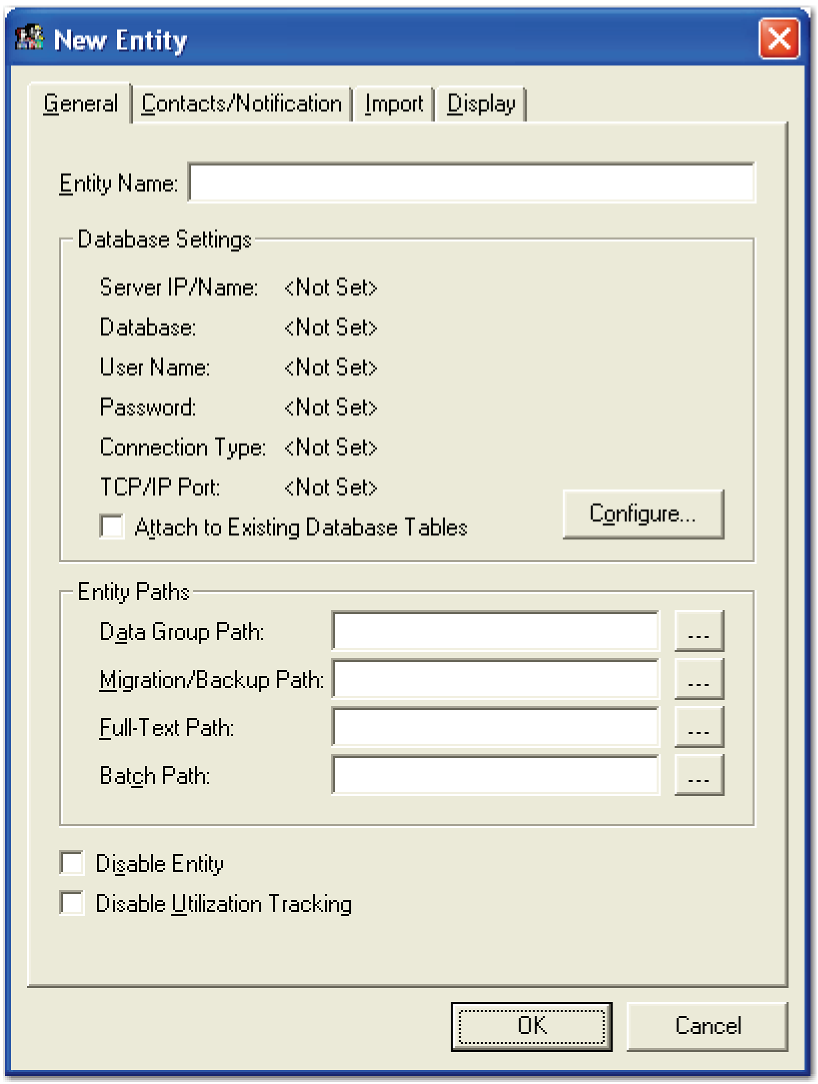
Only global administrators can create new entities, edit existing entities, or delete existing entities.

Creating a New Entity

Creating a new entity involves assigning the SQL Server database connection parameters, entity paths, and properties described in the previous chapter.

To create a new entity:

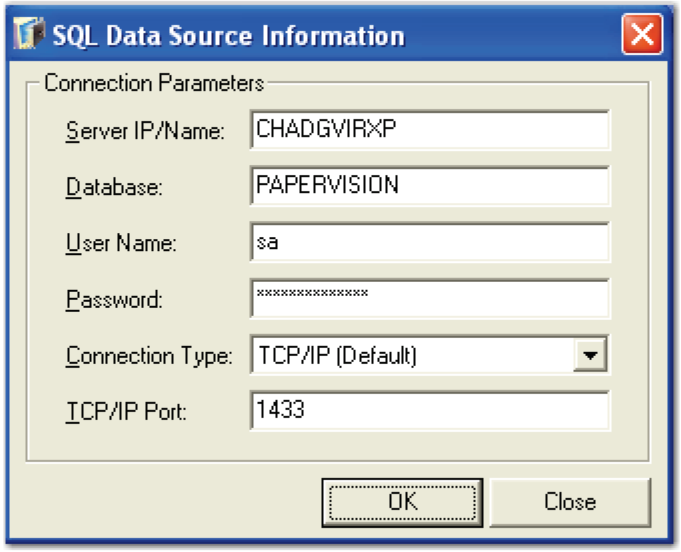
1. Select the **Entities** folder, and then click the **New**  icon. The **New Entity – General** dialog box appears.



Entity Properties – General

2. Enter the name in the **Entity Name** field.

3. To configure the database settings, click the **Configure** button. The **SQL Data Source Information** dialog box appears.



SQL Data Source Information

4. If you have previously configured a SQL Data Source, click the **Last Used** button to populate the screen with the most recent database connection parameters.
5. Otherwise, enter the server, database, user name, password, connection type, and TCP/IP port and click **OK**. This information can specify a completely separate database or database server than you are using for other entities.
6. To use SQL Server's "Trusted Connection" authentication method, simply leave the **User Name** and **Password** fields blank.
7. In the **General** tab, select the Data Group Path, Migration/Backup Path, Full-Text Path and Batch Path.
8. Configure any additional entity properties as described in the previous section on **Entity properties**, and then click **OK**.

Editing an Existing Entity

To edit an existing entity:

1. In the **Entities** screen, select the appropriate entity, and then click the **Properties** icon.
2. Make any necessary modifications to the entity's properties.
3. Click **OK** to save the changes.

> **Note**:
>
> Altering the database settings to a new/different database will not create the entity tables in the new database (as this is only done when creating a new entity).

Deleting an Entity

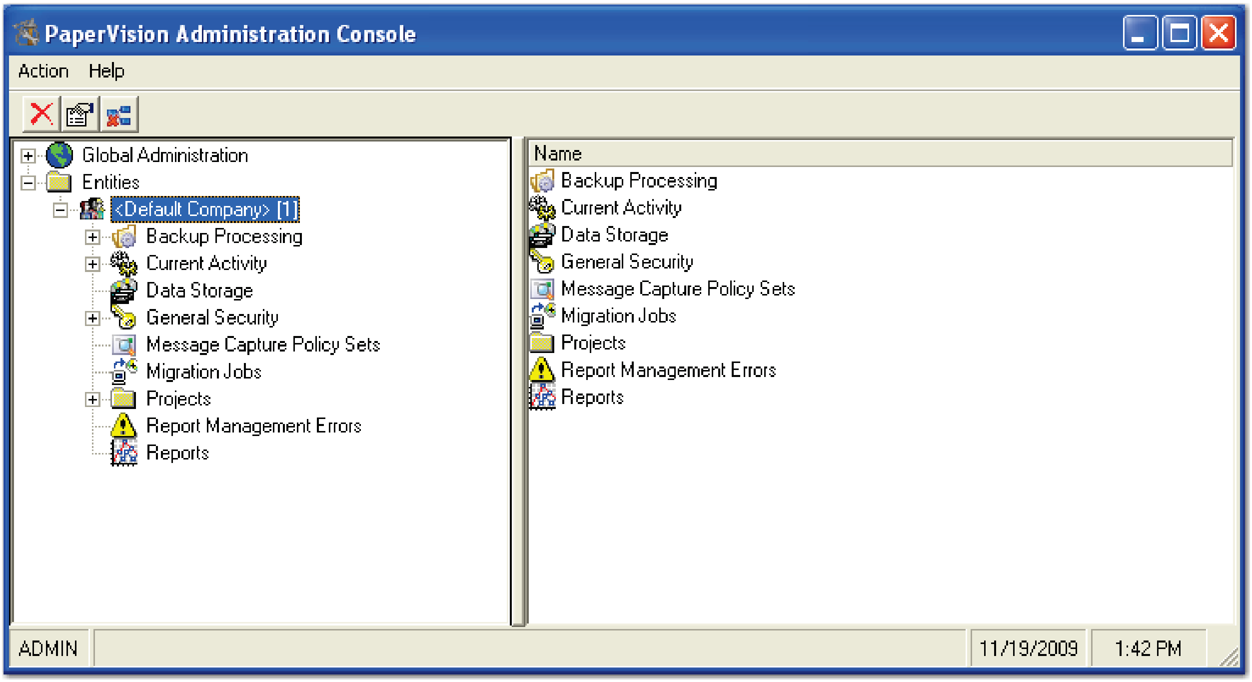
Deleting an entity removes all traces of its existence from the database. It also removes any full-text databases and, depending on the global system settings, may remove data groups.

To delete an existing entity:

1. In the **Entities** screen, select one or more entities to delete.
2. Click the **Delete** icon.
3. Select **Yes** to confirm the deletion.

Chapter 4 – Entity Administration

Entity administration can be performed by global administrators and system (entity) administrators. Entity WorkFlow administrators can perform administrative functions specifically related to WorkFlow (e.g., configure WorkFlow definitions for any project and view WorkFlow history and WorkFlow status reports). To view the settings available for configuration within an entity, expand the **Entities** folder, and then select the appropriate entity from the list.



Entity Administration

Backup Jobs

PaperVision Enterprise allows administrators to specify that certain information should be periodically backed up. This backup process consists of creating a package file which contains the information that needs to be backed up. The package file uses compression that is 100% compatible with the existing PKZip 2.04g format and optional WinZip 9.0 AES encryption. Since the contents of the package are stored referentially, extracting their contents to a separate location using an automated tool such as the PaperVision Data Transfer Manager can allow you to maintain a duplicate copy of all of the documents and full text data in a separate location from the original.

PaperVision Enterprise supports four types of backup jobs:

- **Backup Data Group – Full**: Administrators can "tag" a data group to be backed up in its entirety. The full contents of the directory where the data group is located are backed up.
- **Backup Project – Incremental**: Administrators can specify that certain projects should have their full document contents (including all revisions) backed up. As each project's backup completes, PaperVision Enterprise records the last document object that was backed up so it can start where it left off for the next backup of that project.
- **Backup Project – Full**: A full backup is just like an incremental backup except that every time the backup job starts, it resets the last document object backed up to zero, forcing the entire project to be backed up.
- **Backup Full Text**: Administrators can specify that certain projects should have their full text database contents backed up.

Backup package files may also include two additional, unencrypted files:

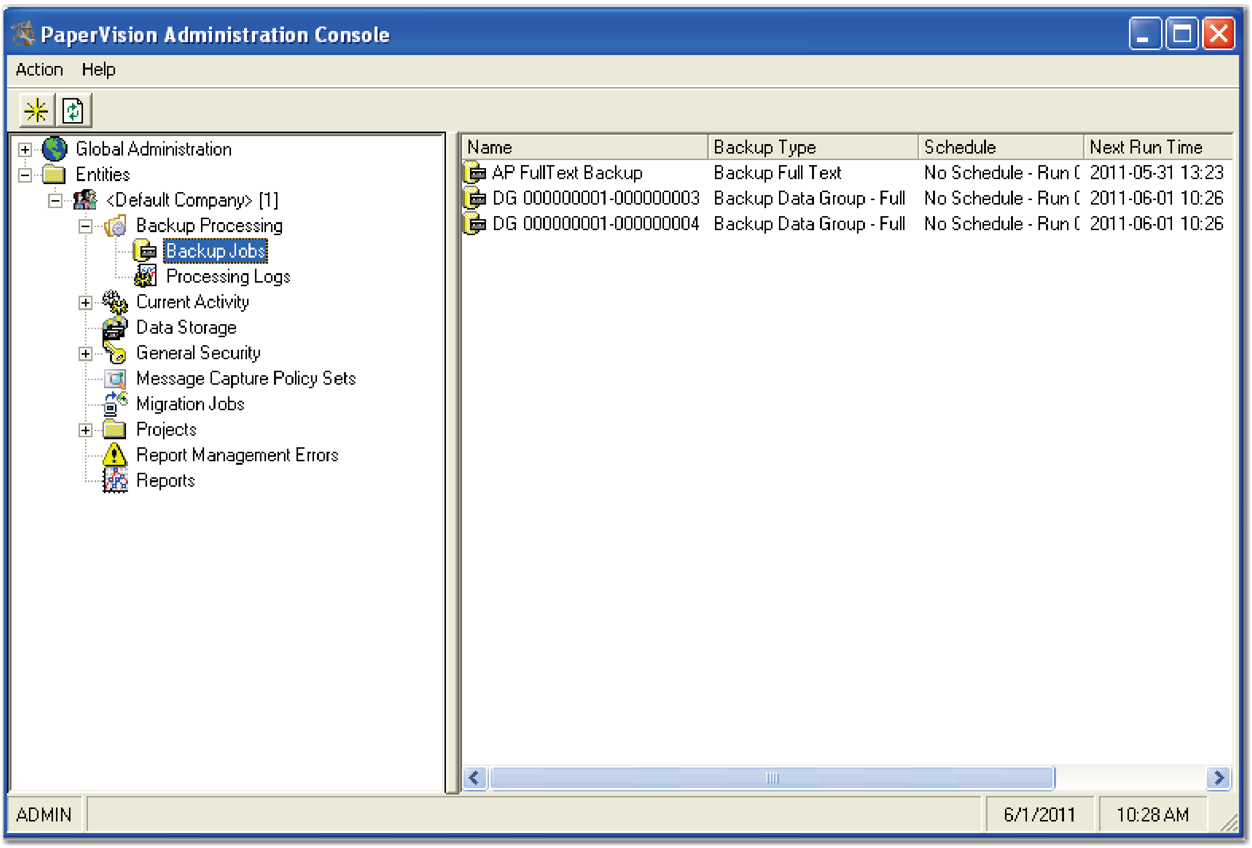
- **PackageCreationFailures.txt**: Lists any files that were supposed to be backed up but could not be located during the process
- **<Package File Name>.pvpkginfo**: XML file containing the associated Entity ID and the name (not value) of the encryption key that was used to encrypt the package

Creating New Backup Jobs

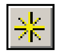
When you create new backup jobs, you can also select the projects to back up, Package File information, and scheduling intervals. Before you run a backup job, ensure the Migration/Backup Path has been configured for the entity (for more information, see the section on **General entity properties** in Chapter 3). A temporary Package Workspace directory must also be configured (for more information, see the section on **Local System Settings** in Chapter 2). If a Package File Encryption Key is required, the appropriate encryption key must already be configured (for more information, see the section on **Encryption Keys** in Chapter 4). To execute a backup job, the Backup Processing automation service operation must also be scheduled (for more information, see the section on **Automation Service Scheduling** in Chapter 2).

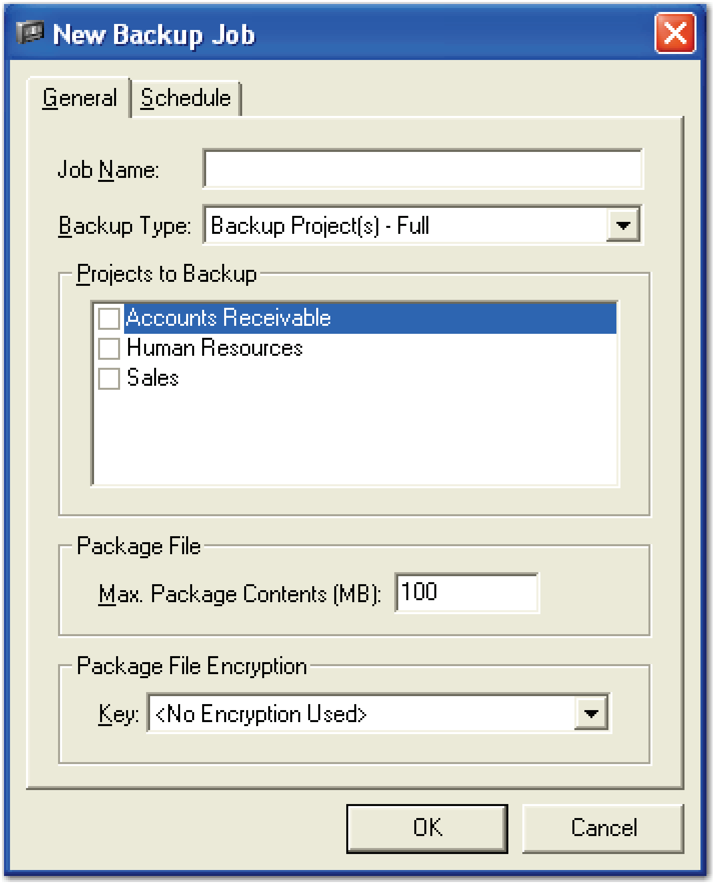
To create a new backup job:

1. Select the entity, and select **Backup Processing** > **Backup Jobs**. The **Backup Jobs** screen appears.



Backup Jobs

2. Click the **New**  icon. The **New Backup Job – General** screen appears.



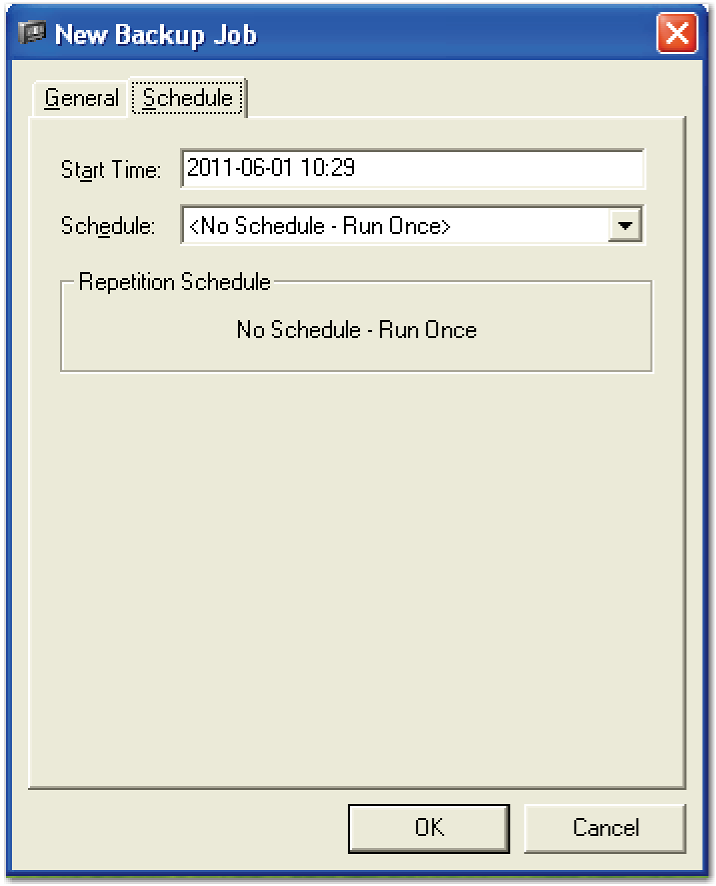
New Backup Job – General

3. Enter the **Job Name**.
4. Select the **Backup Type**.
5. Select the **Projects to Backup**.
6. Enter the **Max. Package Contents (MB)**. This value specifies the maximum size (in MB) of the content data that is placed into a backup package when performing a project-level backup. Once this size is reached, a new package file will be created.

Note:
This value does not specify the size of the package file itself, but the size of its contents. Also, this value can be overridden by the global system settings.

7. To encrypt the package files that are generated, select the name of the **Package File Encryption Key**.

8. Select the **Schedule** tab. The **New Backup Job – Schedule** screen appears.



New Backup Job – Schedule

9. Provide the **Start Time** of the backup job.
10. Select the desired schedule interval and repetition schedule.
11. Click **OK** to save the new backup job.

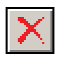
Editing an Existing Backup Job

To edit an existing backup job:

1. In the **Backup Jobs** screen, select the appropriate backup job, and then click the **Properties**  icon.
2. In the **Backup Job Properties** dialog box, make the necessary modifications.
3. Click **OK** to save your changes. The modifications will take effect the next time the automation service processes the backup job.

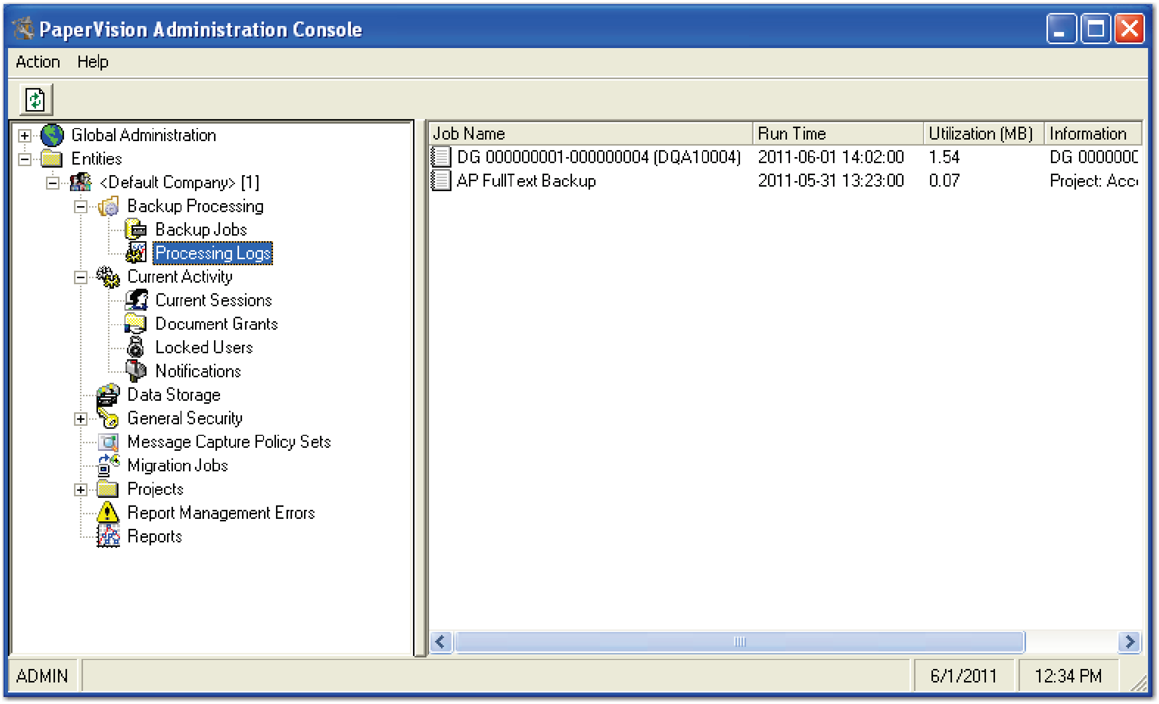
Deleting Backup Jobs

To delete existing backup jobs:

1. In the **Backup Jobs** screen, select one or more backup jobs.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Processing Logs

The Processing Logs screen records each time a backup package file has been successfully created, allowing administrators to review how much data is being backed up each time a job is processed. To view backup processing logs, select the entity, and then select **Backup Processing** > **Processing Logs**. The **Backup Processing Logs** screen appears.



Backup Processing Logs

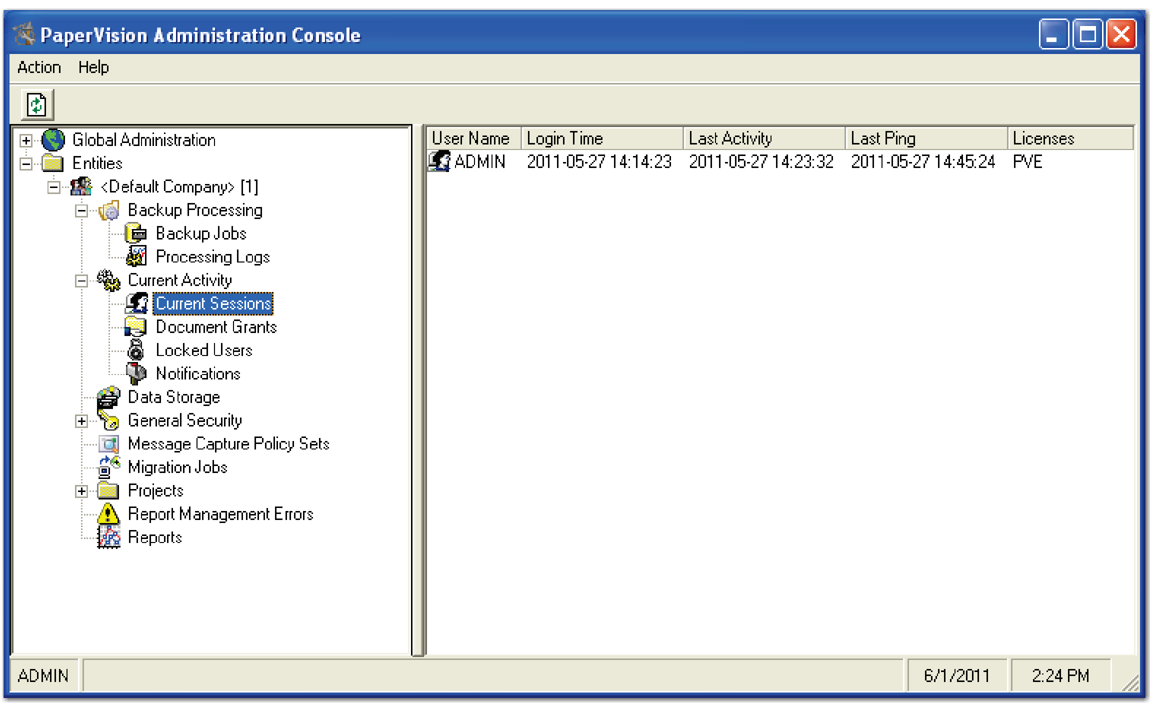
Current Sessions

As users log into PaperVision Enterprise (not the Administration Console), a session is started. Every time a user accesses the server, PaperVision Enterprise verifies that the session is still valid, performs the requested operation, and then updates the user's **Last Activity Time.** If a user sits idle for too long (as specified by the administrator), the session may automatically be terminated.

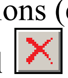
If, during user login, a client application specifies that it is capable of "pinging" the server, the server will instruct the client application to send a keep-alive "ping" at a specified interval. This background "ping" is used to verify that the client application is still opened. If a client has not sent the expected "ping" within the 20 seconds of the specified ping interval, the session will be automatically terminated. This ping validation is useful in freeing up licenses used by applications that were closed without logging out the user. Without pinging, the session wouldn't get terminated until the session times out.

> **Note**:
>
> Some mobile browsers do not support background operations; as a result, the Client Ping Increment setting is not applicable to iPad devices. If you are using the Safari Browser on the iPad device, the length of your session depends on the Max Session Idle Time value the system administrator assigned for the entity.

The **Current Sessions** screen contains a list of all of the sessions currently in use.

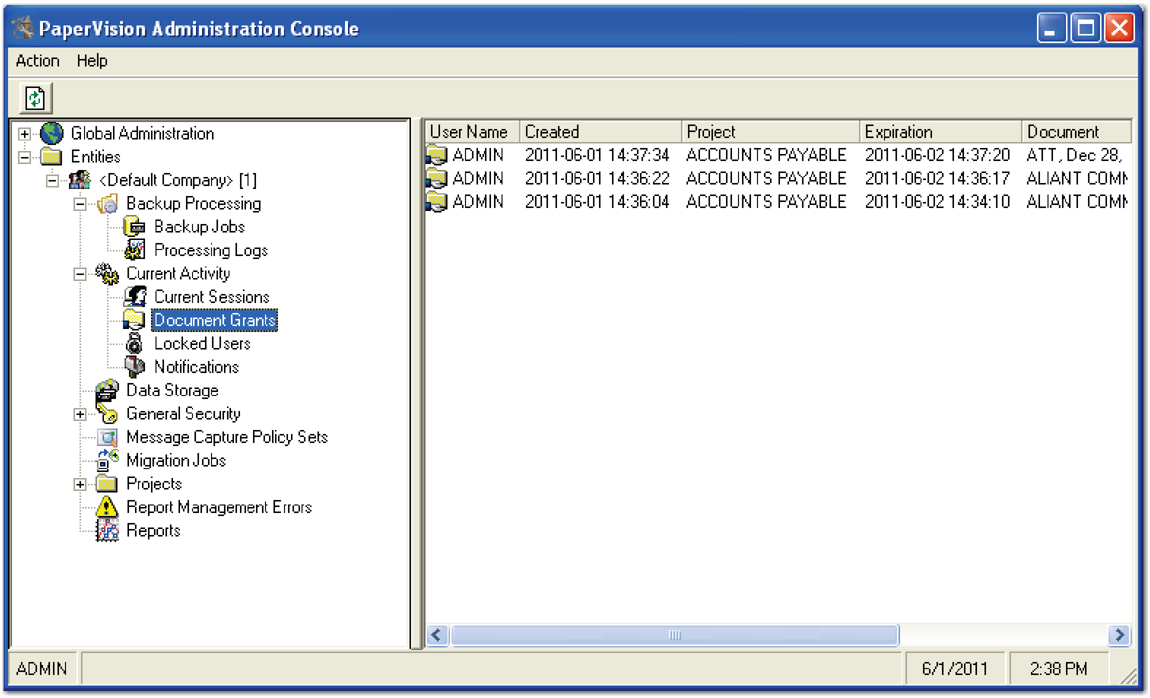


Current Sessions

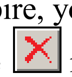
To manually kill any of the sessions (essentially, logging the user off), select the appropriate sessions, and then select the **Kill**  icon.

Document Grants

A document grant is an access mechanism created by a user that lets an outside user access a document via a web URL (that takes that outside user directly to the document). Document grants can have passwords and expiration dates associated with them.

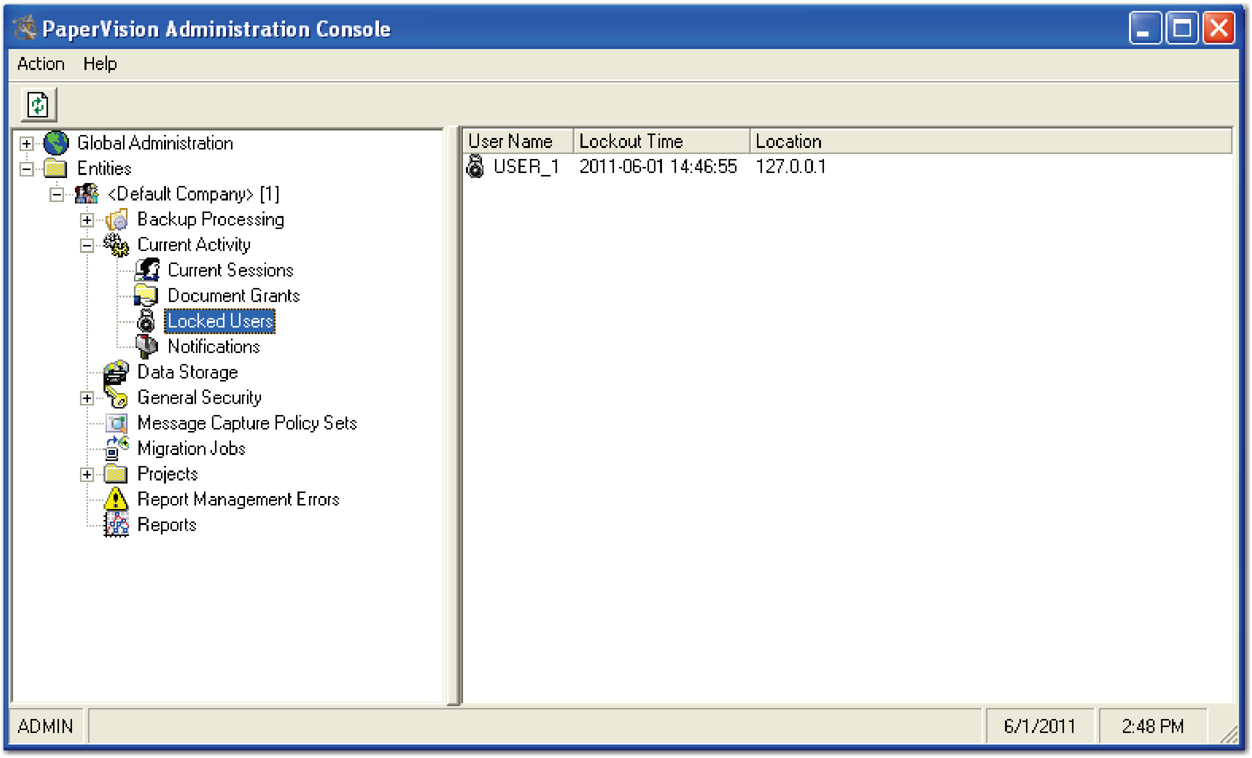


Document Grants

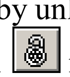
Although document grants expire, you can manually delete them by selecting the appropriate ones, and then click the **Delete**  icon.

Locked Users

Based on your assigned security policy, users may get locked out of the system when they attempt to log in too many times with an incorrect password.



Locked Users

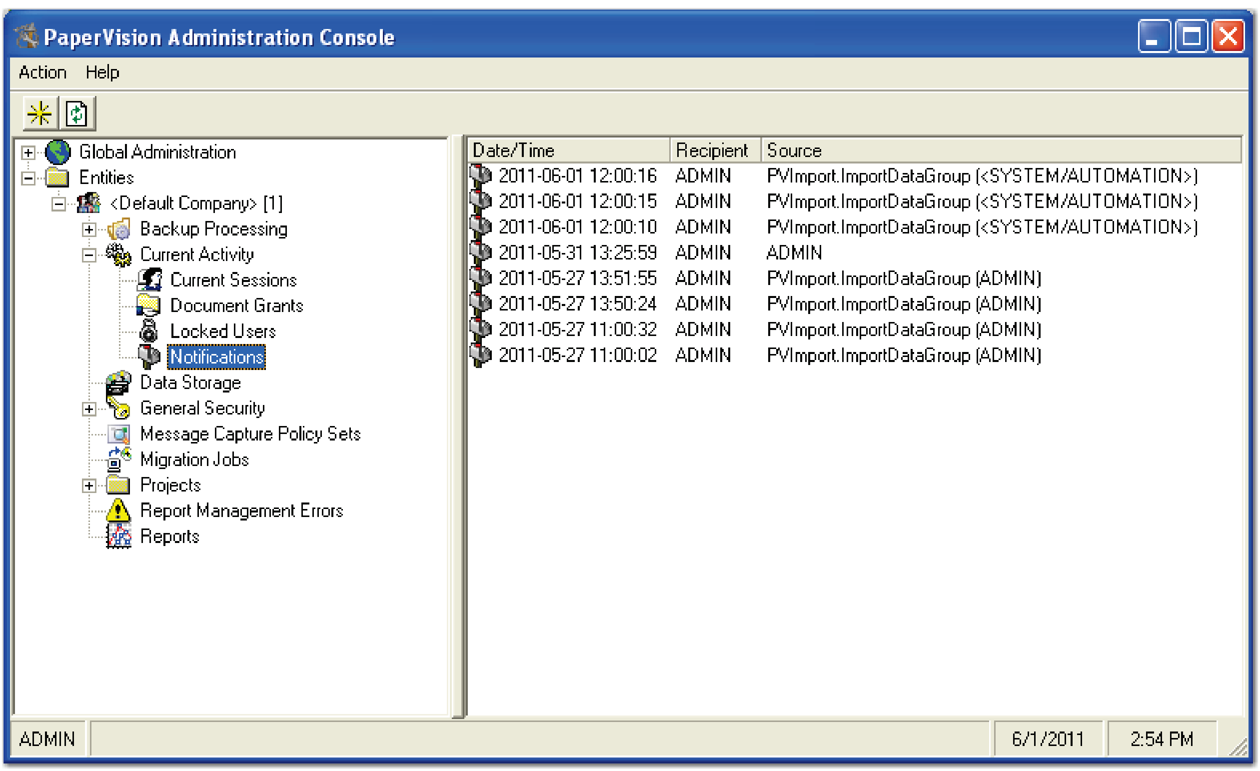
Although your security policy may automatically re-enable these accounts after a specified period of time, you can re-enable them manually by unlocking the user. To unlock a user, select the user account, and then click the **Unlock**  icon.

Notifications

Notifications are messages that are usually generated by the system to let you know that certain events have taken place that may need your attention. Some of the notifications that are automatically generated include:

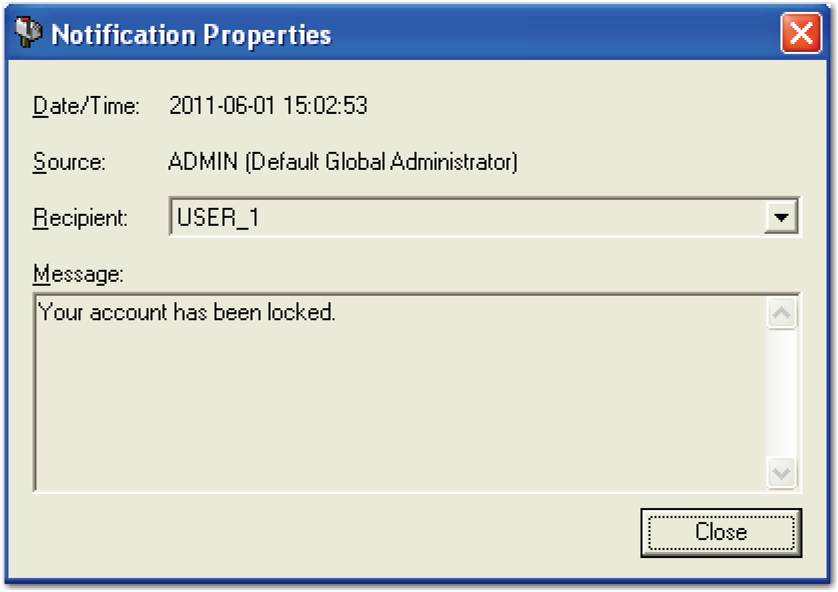
- A data group was successfully loaded (Entity Administrators).
- A migration job was submitted (Entity and Global Administrators).
- A migration job has finished running (Submitting User, Entity and Global Administrators).
- A purge failed (Global Administrators).
- Login attempts were made to a "locked" account (Entity Administrators).
- Login attempts were made when all licenses were in use.
- A workstep instance has been unprocessed for too long (Defined User Group).
- A session's source IP address or host name changed in the middle of the session (if the administrator has prohibited this in the Security Policy).

To view all notifications, select the entity, and then select **Current Activity > Notifications.**



Notifications

To view a notification, select the appropriate notification, and then click the **Properties** icon. The **Notification Properties** dialog box appears.



Notification Properties

To delete notifications, select one or more notifications, and then click the **Delete** icon.

Data Groups

A data group is a set of documents and their index values. A data group may contain one document or it may contain thousands of documents; and, those documents may be grouped into one or many projects. PaperVision supports importing data groups from a number of different sources:

- Digitech Systems' PaperFlow™ Image Data Group Format
- Digitech Systems' DataFlow™ COLD/ERM Data Group Format
- Digitech Systems' PaperVision Enterprise Report Management (PVERM) Data Group Format
- Digitech Systems' PaperVision Message Capture (PVMSG) Data Group Format
- Digitech Systems' PaperVision Package File Format
- ImageMax's Docu-ROM™ Image Data Group Format
- ImageMax's ScanTRAX™ Image Data Group Format
- C.A.R. (Film-based) formatted text file
- XML Formatted Data Group

Other than C.A.R. and XML formatted data groups, all other data groups are produced by their respective applications.

PaperVision Package Files

PaperVision Package Files are compressed and optionally encrypted files that contain all of the files (in the appropriate directory structure) for one of the other data group types supported and include a file extension of PVPKG. Package files are particularly useful when you wish to transport another data group, but need to provide added security (through encryption) or increase file transfer speeds (by transferring one large file rather than hundreds or thousands of small files). Package files use compression that is 100% compatible with the existing PKZip 2.04g format and optional WinZip 9.0 AES encryption. As such, package files can be created using most popular Zip compression tools. However, the PaperVision Data Transfer Manager can be used to completely automate the creation and transport of package files.

To be importable, package files must include an additional unencrypted file embedded in the root of the package file (known as the package information file):

File Name: "<PackageFileName>.pvpkginfo"

File Contents:

```
<?xml version="1.0"?>
<PVPACKAGEINFO>
    <ENTID>EntityIDHere</ENTID>
    <ENCRYPTKEYNAME>KeyNameHere</ENCRYPTKEYNAME>
    <IMPORTFILE>ImportFileNameHere</IMPORTFILE>
</PVPACKAGEINFO>
```

As PaperVision Enterprise imports a package file, it first extracts the package information file. It uses the ENTID and ENCRYPTKEYNAME values to determine if the package contents are encrypted. If the ENCRYPTKEYNAME value is not empty, then it will retrieve the encryption key value for the encryption key name for the entity ID specified and use that value to decrypt the remaining contents of the package. Then, PaperVision Enterprise extracts the contents of the package file to the path specified in the Global System Settings' **Local Package Workspace Path.** Once the contents of the file are fully extracted, it uses the file name specified in the IMPORTFILE value (i.e. "DATAGRP.MDB") to determine the data group type and performs the import of the data group. Once the import is complete, the package file contents are removed from **Local Package Workspace Path.**

C.A.R. Data Groups

Computer Aided Retrieval (C.A.R.) allows users to search through both film-based images as well as digital documents located in data groups. When a user selects a document that is located on film, the user is notified accordingly and given the roll and frame number in which the desired image can be located.

PaperVision Enterprise imports C.A.R. files that are "Pipe-Delimited Text Files". These text files contain the index information as well as the roll and frame number on which to locate a document.

The following sample C.A.R. File can be loaded into PaperVision Enterprise:

```
[CAR]
DGNAME=99990001
DEPTNAME=ABC Corporation
PROJNAME=Accounts Payable

ACME CORP.|12/31/98|19421|1
B SQUARE|12/30/98|19421|4
```

The first four lines of the C.A.R. file should always be formatted as shown above. The "DGNAME" value specifies the unique identifier given to this C.A.R. data group. No other C.A.R. data group should ever have the same "DGNAME" value unless you are adding data to an existing one. The "DEPTNAME" value should contain the department or company name that the data group belongs to. The "PROJNAME" field contains the name of an existing project in PaperVision Enterprise into which the documents will be imported. Unlike all of the other import data group formats supported by PaperVision Enterprise, C.A.R. data groups are the only types that require that the project already be specified. PaperVision Enterprise will import the index field data based on the order of the index fields.

> **Note**:
>
> The index fields are given, followed by a roll number, then a frame number. You must supply all index fields defined in a project. If specific information for a field is not available, you can leave the value blank, but be sure to leave a placeholder for the information.

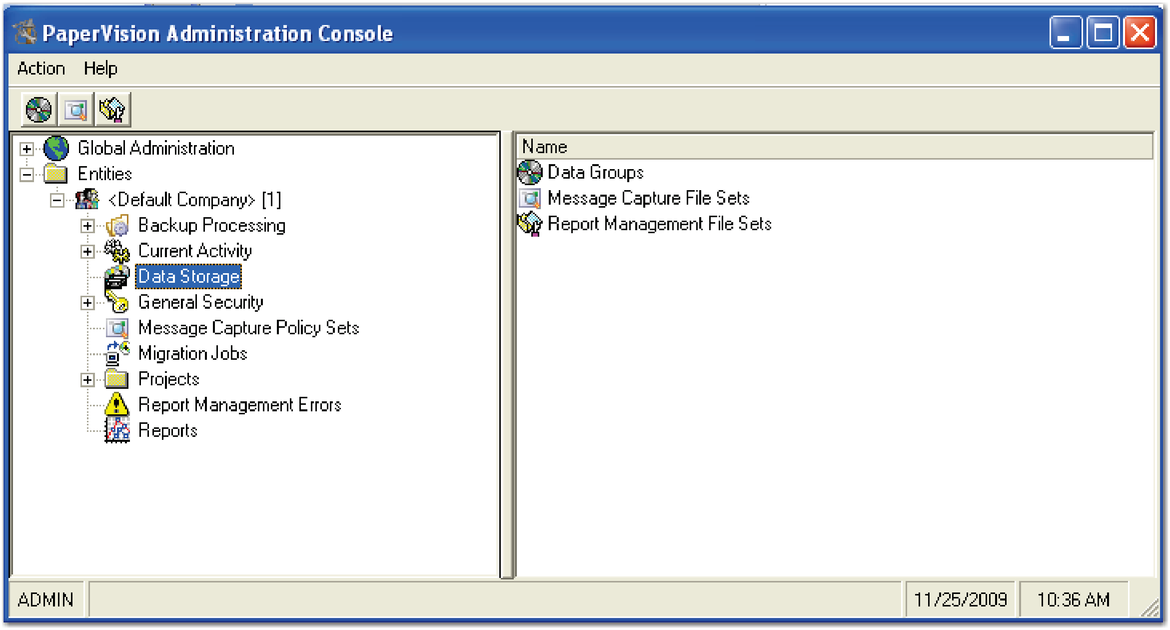
XML Data Groups

PaperVision Enterprise supports importing XML-formatted data groups. This allows any application capable of creating XML files to be able to import documents of any type (images, MS Word, PDF files, etc.) into PaperVision Enterprise. The format required for an XML data group is specified in the **DATAGRP Format.XML** file located in **Digitech Systems\PaperVision\Docs** directory where PaperVision Enterprise was installed.

Viewing Data Groups

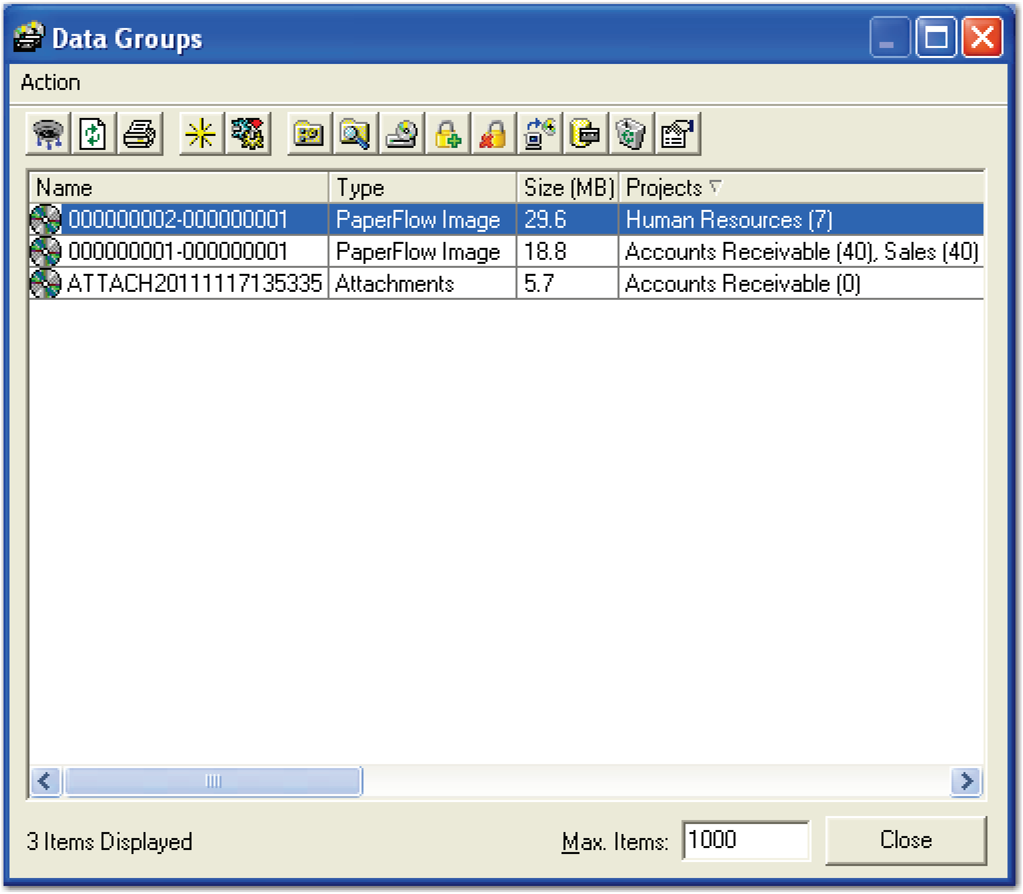
To view the data groups:

1. Select the entity, and then select **Data Storage.** The **Data Storage** screen appears.



Data Storage

2. Double-click on **Data Groups**. The **Data Groups** screen appears.



Data Groups

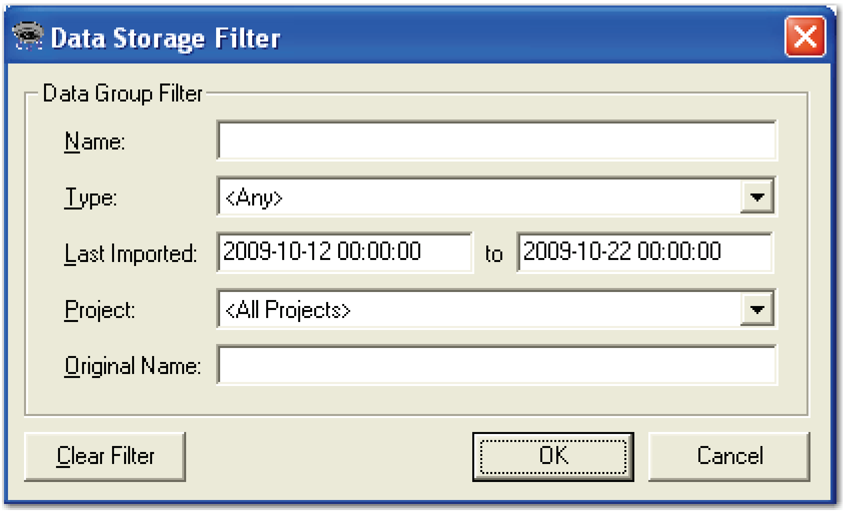
> **Note**:
>
> In the Data Groups screen, the last loaded document ID is shown in parentheses after the project name. For example, the first project is displayed as "Human Resources (7)".

Filtering the Data Groups List

When thousands of data groups exist, you can filter the list of data groups.

To filter the data groups listing:

1. From the **Data Groups** screen, click the **Filter**  icon. The **Data Storage Filter** screen appears.



Data Storage Filter

2. Enter the desired filter criteria, and then click **OK**.

   Enter dates in the "yyyy-mm-dd hh:nn:ss" format. The data groups meeting your specified filter criteria will appear.

   > **Note**:
   >
   > At the bottom of the results screen, PaperVision Enterprise specifies the number of items and it will include the word "Filtered" if the results have a filter applied.

Importing a Data Group

When a data group is imported (with the exception of C.A.R. data groups), PaperVision Enterprise checks whether the necessary projects already exist and creates them if they are not present. The system then compares the index field names in the data group with the index field names in the existing PaperVision Enterprise project.

For example, the following PaperVision Enterprise project fields already exist:

- Account Number
- Customer Name
- Invoice Date

The following Data Group fields are imported into PaperVision Enterprise:

- Customer Name will be populated into the second index field in the existing "Customer Name" project.
- Account Number will be populated into the first index field in the existing "Account Number" project.
- PO Number will be ignored since this field does not exist (but could be added manually) in the existing project.

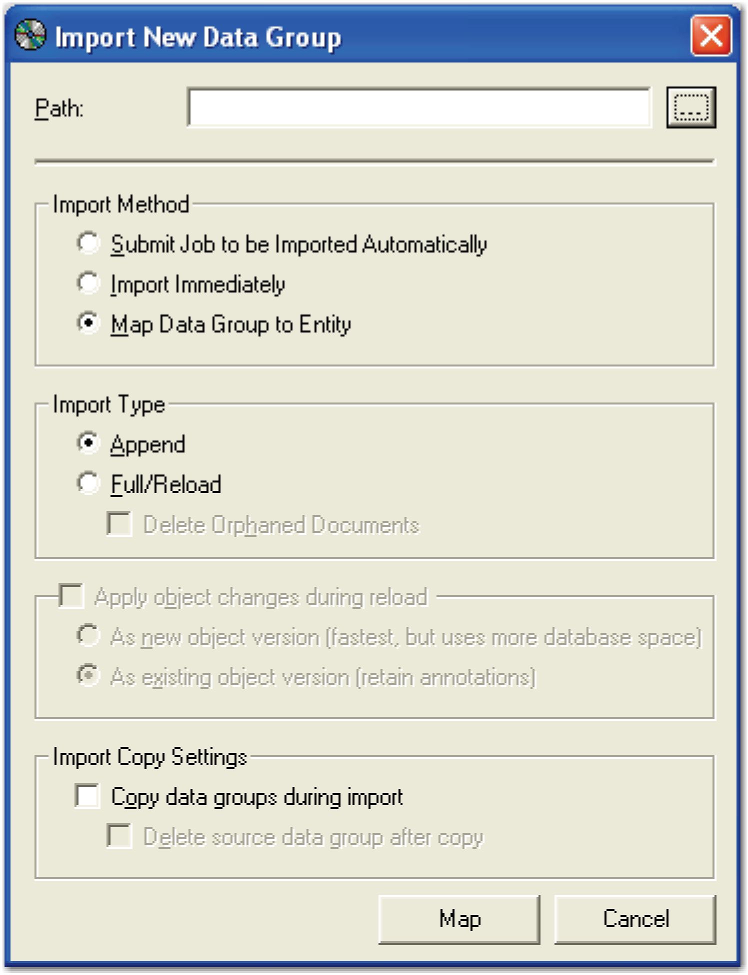
Since the data group does not contain an "Invoice Date" field, it will be populated with an invoice date value of [Blank].

> **Note**:
>
> When PaperVision Enterprise imports PaperFlow data groups whose projects contain the tilde ("~") character, PaperVision Enterprise only recognizes the portion of the project name to the left of the tilde. This procedure allows PaperFlow users to create multiple projects (containing the same index field setup), but have different scan, process, index location, etc. settings and have those projects imported into the same PaperVision Enterprise project.

As data groups are imported, once the documents for a project are ingested, the procedure attempts to apply document security levels and create WorkFlow instances (per applicable pre-conditions), as well as import any full-text data for those documents. Any uncompleted process will be automatically added as a maintenance queue item, therefore allowing the remainder of the data group to be imported successfully. For more information on maintenance queue processing, see the **Maintenance** section of the Global Administration chapter.

To manually import a data group:

1. In the **Data Groups** screen, click the **Import Data Group** icon. The **Import Data Group** dialog box appears.



Import Data Group

2. Click the ellipsis button to locate the data group path from which to import. The following extension types can be imported:
    - DATAGRP.MDB (for PaperFlow Data Groups)
    - COLDGRP.DAT (for DataFlow Data Groups)
    - CDSTAMP.MDB (for Docu-ROM Data Groups)
    - PROJECT.MDB (for ScanTRAX Data Groups)
    - CARFILE.TXT (for C.A.R. Data Groups)
    - DATAGRP.XML (for XML Data Groups)
    - ERMGROUP.XML (for PVERM Data Groups)
    - MSGGROUP.XML (for PVMSG Data Groups)
    - PVPKG file (for PaperVision Package Files)
3. Select from the following import methods:
    - **Import Immediately** will cause PaperVision Enterprise to import the data group while you wait.
    - **Submit Job to be Imported Automatically** will submit the import to be handled by the PaperVision Automation Service rather than making you wait for the import to complete.
    - **Map Data Group to Entity** will cause PaperVision Enterprise to map the data group information to the entity so that any data groups that are identified by the automation service that have the same customer ID and customer name will automatically be imported into the entity (without actually performing the data group import operation).
4. Select whether to perform an **Append** import (to only import documents that have not been previously loaded from this data group) or a **Full/Reload** import (to completely reload all of the documents in the data group).

    > **Note**:
    >
    > The Full/Reload setting does not pertain to data groups that have never been imported into PaperVision Enterprise, as new data groups are always imported as appends. Also, PVERM and PVMSG data groups only support Append imports.

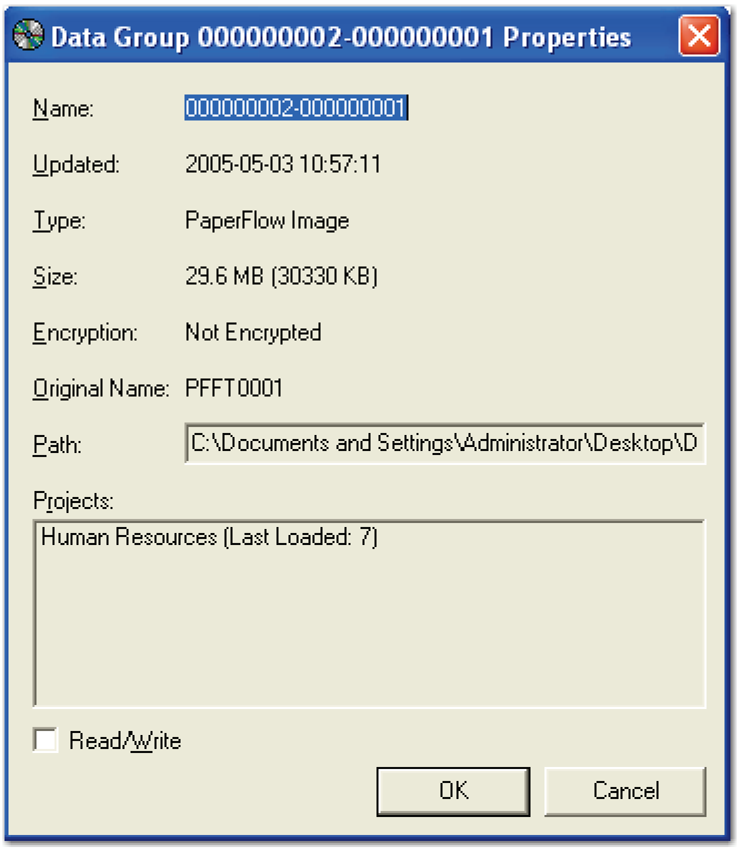
5. If desired, override your entity's default import settings by making the necessary changes. Full descriptions for all import settings are located in the **Entity Configuration** chapter.

6. Click **Start**. Based on your selected import method, PaperVision Enterprise will either import the data group immediately, or it will be submitted to the automation service to be handled at a later time. If the data group is submitted to the automation service via a UNC path, any automation server can import the data group (otherwise, only the current automation server will be able to perform the import).

Viewing and Editing Data Group Properties

To view or edit data group properties:

1. In the **Data Groups** screen, select the appropriate data group, and then click the **Properties**  icon. The **Data Group Properties** dialog box appears.



Data Group Properties

2. Change the **Read/Write** setting to meet your requirements. If a data group is marked as **Read/Write**, then when a document is deleted from PaperVision Enterprise, the files will be physically deleted from their source data group. Otherwise, only the reference pointers to that document are deleted from the PaperVision Enterprise database (no files are deleted).

> **Note**:
>
> Document files cannot be physically deleted from PVERM data groups as they are contained in the shared print streams of other documents.

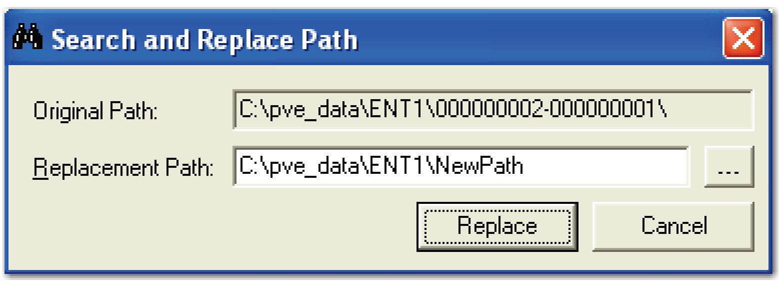
3. Click **OK** to save your changes.

Modifying Data Group Paths

In some scenarios, you may need to move one or more data groups to a new location. Once data groups have been physically moved, you must modify the paths that PaperVision Enterprise uses to reference the data group locations.

To modify data group paths:

1. In the **Data Groups** screen, select the data groups to modify, and then click the **Modify Path**  icon. PaperVision Enterprise will evaluate the selected data group paths to locate their common path. The **Search and Replace Path** dialog box appears.



Search and Replace Path

2. To replace the original path, browse to the **Replacement Path**, and then click **Replace**.

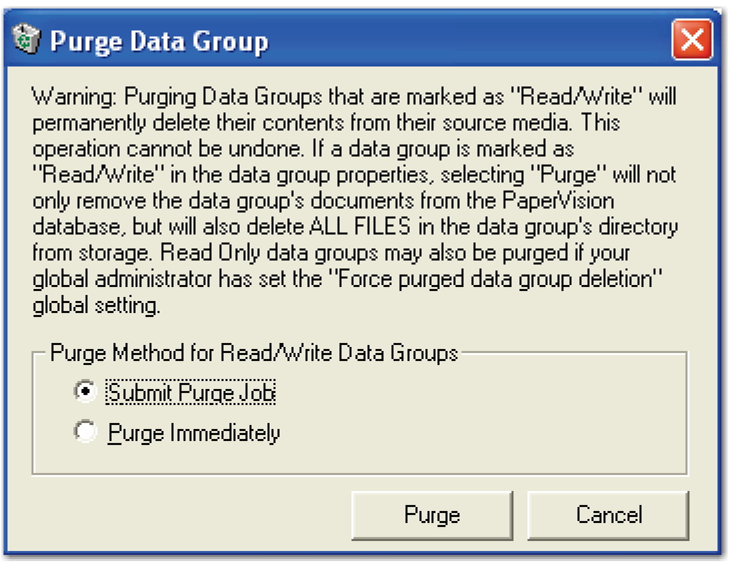
Purging Data Groups

Data groups can be purged from PaperVision Enterprise to delete all of the documents related to those data groups from the system. If the data group is marked as **Read/Write**, PaperVision Enterprise will also physically delete all of the files for the data group from the system.

> **WARNING!**
>
> Use caution when purging a Read/Write "In-Line" data group. These are simply directories that were imported via the directory manager. Since the directory manager may not have imported all of the files in these in-line data groups, or the directories may be used for other purposes, purging them may cause undesired results.

To purge data groups:

1. In the **Data Groups** screen, select the data groups, and then click the **Purge** icon. The **Purge Data Group** dialog box appears.



Purge Data Group

2. Select whether to **Submit Purge Job** (purge handled by the PaperVision Automation Service) or **Purge Immediately** (data group is purged while you wait), and then click **Purge**.

Resizing Data Groups

Resizing data groups causes PaperVision Enterprise to automatically recalculate the total space used by each of the files within the data group. If the size calculated by the resize operation is less than the size recorded in the database, a notification is automatically sent to all global administrators alerting them to the discrepancy.

To resize data groups:

1. In the **Data Groups** screen, select the appropriate data groups, and then click the **Resize** icon.
2. Select **Yes** to confirm the resizing.

Moving Data Groups

PaperVision Enterprise offers the ability to move data groups to an entity's specified Data Group Path**.** This is particularly useful when storage is outgrown and needs to be relocated to other media. If you attempt to move data groups that already exist in the entity's data group path or In-Line data groups, they will simply be ignored. The move process consists of copying the entire contents of the data group to the destination, updating the recorded location of the data group in the database, and then attempting to physically delete the data group from its source location. This process ensures that the data group remains available for access during the entire move process. The move process is performed as a maintenance queue item by the PaperVision Automation Service.

> **Note**:
>
> You must not import the data group at the same time that you attempt to move it.

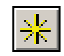
To move data groups.

1. Ensure the entity's **Data Group Path** is located where the data groups should be moved.
2. In the **Data Groups** screen, select the data groups, and then click the **Submit for Move** icon.
3. Select **Yes** to confirm the submittal of the data groups. The appropriate maintenance queue items will be created and then processed by the PaperVision Automation Service when it is scheduled to process the maintenance queue.

Creating New Attachment Data Groups

As users attach or add new documents or check in a new document version within PaperVision Enterprise, the server automatically places the new files into an attachment data group. If an attachment data group does not already exist, it is automatically created. From that point forward, all new attachments for that project are placed into this new data group. In some instances, this data group can become quite large, and you may want to create a new attachment data group in a different storage location. All attached documents and new document versions are always placed into the most recently-created attachment data group for that project.

To create a new attachment data group:

1. In the **Data Groups** screen, click the **Create New Attachment Data Group**  icon.
2. Select **Yes** to confirm the creation of the new attachment data group.

Migrating Data Groups

A data group can be submitted for migration so that the contents of the data group, along with any modified document index fields, are written to an entirely new data group.

> **Note**:
>
> Data group migration is not supported for PVERM (PaperVision Enterprise Report Management), C.A.R., or DataFlow data groups.

To migrate a data group:

1. In the **Data Groups** screen, select the data group, and then click the **Migrate**  icon.
2. Select **Yes** to confirm the submittal of the data group for migration. You can then run the migration job at your convenience.

Backing Up Data Groups

You can submit a data group to be backed up in its entirety. Data group backup jobs are initially scheduled to run only once, although you can modify the job to make it recurring.

To submit a backup job for an entire data group:

1. In the **Data Groups** screen, select the data group, and then click the **Backup**  icon.
2. Select **Yes** to confirm the submittal of the data group for backup.
3. Select the desired **Backup Package Encryption Key** to be used when backing up the data group, and then click **OK**.

Data Group Encryption and Decryption

PaperVision Enterprise supports encryption of data at rest. As data groups are imported or documents are added to the system, PaperVision Enterprise can optionally encrypt the data to secure access to its information while stored. When a document is requested, PaperVision Enterprise will automatically decrypt the data for display.

All data group types managed by PaperVision Enterprise can be encrypted with the following exceptions:

- **In-Line**: In-Line data groups cannot be encrypted because they are not managed by PaperVision Enterprise. In-Line data groups are created by directory manager jobs that are not configured to copy the files to a data group.
- **PVERM COLD**: PaperVision Enterprise Report Management COLD data groups do not support encryption at the data group level. This is because the same powerful encryption can be applied to the data as it is being processed by selecting the **File Set Encryption Key** in the report management job configuration.
- **Message Capture**: PaperVision Enterprise Message Capture data groups do not support encryption at the data group level. This is because the same powerful encryption can be applied to the data as it is being processed by selecting the **Message Encryption Key** in the message capture policy set configuration.
- **DataFlow COLD**: DataFlow COLD data groups cannot be encrypted because the DataFlow format does not lend itself to data group level encryption. If the data group were to be encrypted, when a user requests a single page out of a very large report file, the entire report file would need to be decrypted just to access the single page.

Data groups can be encrypted during import if the **Data Group Encryption Key Name** is selected in the entity's security policy prior to importing the data group. Data groups that have already been imported can be submitted for encryption, and data groups that have been encrypted can subsequently be submitted for decryption. When a data group is submitted for encryption or decryption, a maintenance job is created in the Maintenance Queue.

When the automation service processes an encryption maintenance job, the data group is copied in its encrypted state to a secondary location (enabling users to continue to access the data group during the encryption process). Once the encryption process is completed, the reference to the data group is updated to point to the newly encrypted location. The old, unencrypted directory is submitted as a deletion job to be processed by the automation service.

To submit data groups for encryption:

1. Ensure that the **Data Group Encryption Key Name** has been specified in the entity security policy.
2. Ensure the data groups to encrypt are marked as **Read/Write.**
3. Highlight the data groups.
4. Click the **Submit for Encryption**  icon.

5. Select **Yes** to submit the data groups for encryption. Now that the maintenance jobs to encrypt the data groups have been submitted, the data groups will be encrypted when the automation service processes the maintenance jobs.

To submit data groups for decryption:

1. Ensure the data groups to decrypt have already been encrypted (an encryption key name appears in the **Encryption** column).
2. Highlight the data groups.
3. Click the **Submit for Decryption**  icon.
4. Select **Yes** to submit the data groups for decryption. Now that the maintenance jobs to decrypt the data groups have been submitted, the data groups will be decrypted when the automation service processes the maintenance jobs.

General Security

PaperVision Enterprise's robust security architecture allows system (entity) administrators to control nearly every aspect of system access. General security properties are configured through the entity's security policy. Project-level and document-level security is handled from within the project configuration. However, prior to configuring project-level and document-level security, system users and groups must first be defined.

Encryption Keys

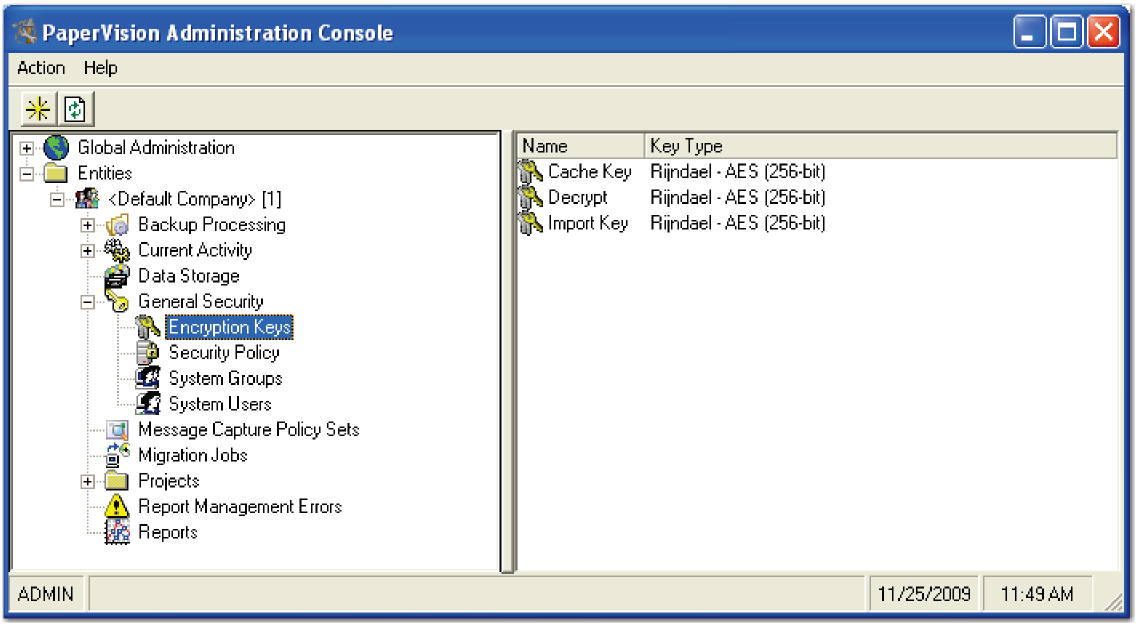
PaperVision Enterprise provides the ability to configure and manage encryption keys. Once configured, an encryption key can then be used for numerous purposes such as the encryption of cached documents. PaperVision Enterprise's encryption process utilizes the following design:

- Algorithm: Rijndael – AES (256-bit)
- Encryption Mode: CBC (Cipher Block Chaining)
- Padding Method: FIPS81 (Federal Information Processing Standards 81) scheme (ISO10126)
- Secret Key Generation: User-defined pass phrase is passed through the SHA-2 algorithm (Secure Hashing Algorithm) to generate a 256-bit hash

Creating a New Encryption Key

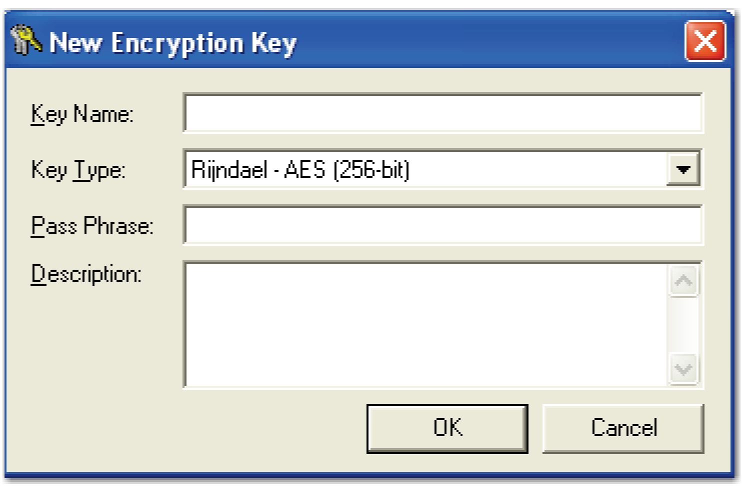
To create a new encryption key:

1. Select the entity, and then select **General Security > Encryption Keys**. The **Encryption Keys** screen appears.



Encryption Keys

2. Click the **New**  icon. The **New Encryption Key** dialog box appears.



New Encryption Key

3. Enter the **Key Name** that they will use to identify the key.
4. Select the **Key Type**, which identifies the type of encryption that will be used for this key.

5. Enter the **Pass Phrase** that will be used to generate the key.
6. Optionally, provide a general description of the key.
7. Click **OK** to save the new encryption key.

Editing an Existing Encryption Key

In order to prevent any previously-encrypted data from becoming unreadable, only the description of the encryption key can be modified.

> **Note**:
>
> IIS must be restarted after the encryption key has been edited or changed to ensure the Browser-Based Viewer will read all file types correctly.

To edit an existing encryption key:

1. In the **Encryption Keys** screen, select the appropriate encryption key, and then click the **Properties** icon.
2. In the **Encryption Key Properties** dialog box, make the necessary modifications to the description, and then click **OK**. The modifications will take effect the next time a process loads the key values.

Deleting Encryption Keys

> **Important**!
>
> Data that has been encrypted with an encryption key becomes unreadable if that encryption key is deleted.

To delete existing encryption keys:

1. In the **Encryption Keys** screen, select one or more encryption keys.
2. Click the **Delete** icon.

   > **Note**:
   >
   > Any encrypted data using the key(s) will become inaccessible.

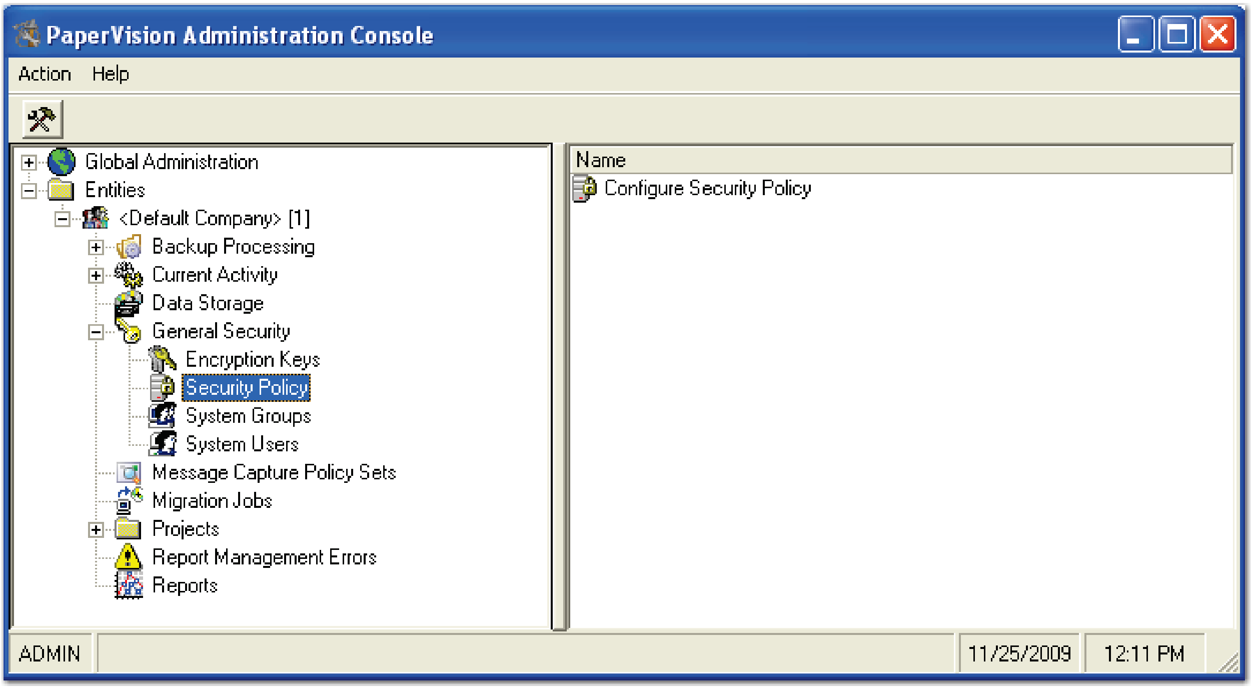
3. Click **Yes** to confirm the deletion.

Security Policy

PaperVision Enterprise's entity-level security policy allows system (entity) administrators to define system-wide security settings.

To view the entity's security policy:

1. Select **General Security > Security Policy**. The **Security Policy** screen appears.

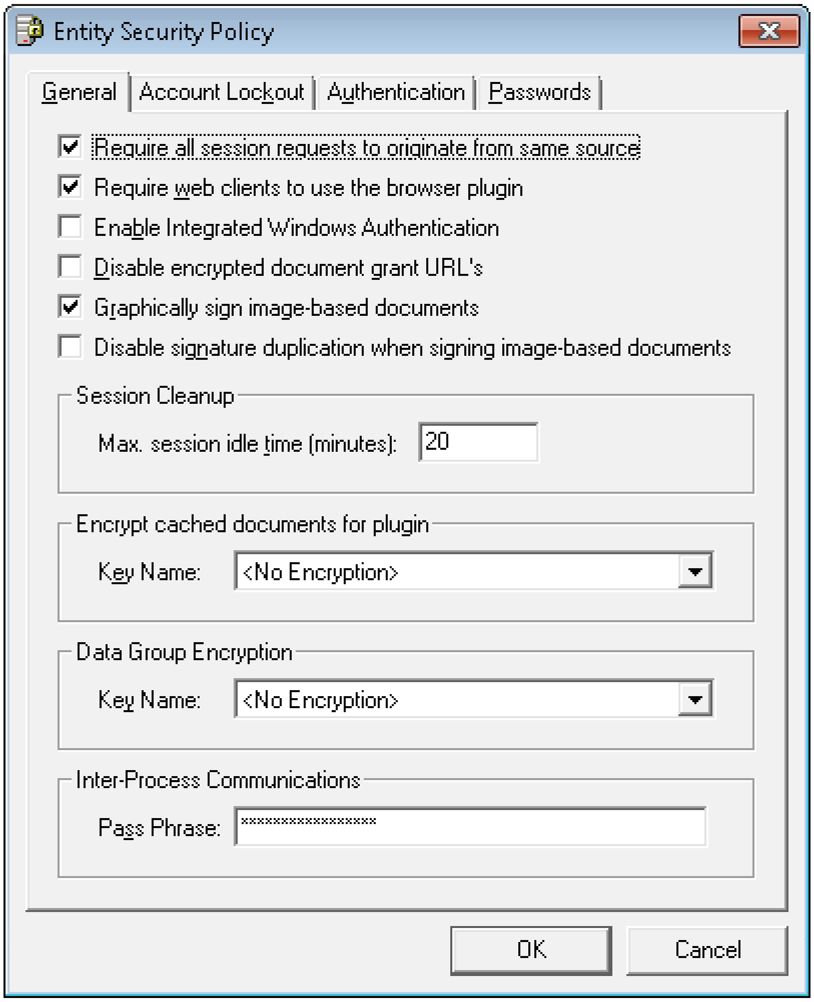


Security Policy

2. Select **Configure Security Policy**, and then click the **Configure Security Policy**  icon.

Entity Security Policy – General Settings

The entity's General Security Policy setting allows you to configure user session settings, encryption configurations, and other security settings for the entire entity.



Entity Security Policy – General

Require all session requests to originate from same source

This setting requires all session activity to originate from the source of the original login. This ensures that someone cannot take over your session to gain access to your documents. When you log into PaperVision Enterprise, it tracks the IP address (or computer name) that was used to gain access. Every time you request information from the server, it checks to verify that your request originated from the same IP address (or computer name). If not, PaperVision Enterprise denies the request and sends a notification to the system administrators.

Require web clients to use the browser plug-in

When a user views a document, the document can be either viewed in the native application for the file (as defined by the operating system) or in the PaperVision Enterprise document viewing browser plug-in. Since the plug-in enforces functional security on those documents, you may wish to require all users who are accessing the system to use the plug-in.

Enable Integrated Windows Authentication

This setting allows users of the PaperVision Enterprise Web Client application to authenticate automatically using their Windows domain and user name, eliminating the need to log into PaperVision Enterprise. This requires that a PaperVision Enterprise user account exist that is in the "Domain\User" format for the Windows user attempting to login. Due to the nature of IIS, Windows authentication, and process redirection, this functionality can only be used when the client application is connected directly to the PaperVision Enterprise database (in other words, you cannot be redirecting to a PaperVision Enterprise application server).

Disable encrypted document grant URLs

This setting enables document grant URLs to be passed unencrypted, which makes the URLs considerably shorter. Although guessing a grant ID (which is a GUID) would be difficult, disabling the document grant URL encryption opens a potential vulnerability. Users should weigh the benefits of a considerably shorter URL against the loss of security provided by encrypting the URL. If this option is selected, the application will accept both encrypted and unencrypted incoming (lookups) grants. If this option is not selected, the system will only allow retrieval of encrypted grants.

The options below can be configured in the PVDMDOCVIEW section of the PVDM.INI file:

If **DOCGRANT-NOPROMPT=1** is present, the user will not be prompted for an expiration date and password before grant creation.

If **DOCGRANT-NOCOPYNOTICE=1** is present, the user will not be prompted after the URL has been copied to the clipboard (after selecting the **Copy** button).

Graphically sign image-based documents

Document validation occurs on all files within a document. User should keep in mind that for optimal performance they should consider single-file documents for signing to keep from having calculate SHA256 hashes for every page of the document. It is important to note that the non-repudiation that is performed in PVE absolutely ensures that neither the record of signature (i.e. data base entry for the signature) nor the document itself have been tampered with. The green checkmark to the left of the signature indicates that the non-repudiation validation for the signature and document have passed. If either the signature entry in the database or the document itself is modified, the validation checks will fail and will show an erroneous signature (the green checkmark is replaced with a red X.) This is an important requirement for admissibility of legal documents signed electronically.

Disable signature duplication when signing image-based documents

If enabled will keep old signatures from being carried forward on image-based documents.

Max Session Idle Time

This setting specifies the number of minutes that a user can sit idle before the automation service automatically kills the user session (logs the user out of the system). This value cannot exceed value assigned in the General System Settings by the global administrator.

Encrypt cached documents for plug-in – Key Name

When a PaperVision Enterprise application server caches documents to be accessed by remote users, it temporarily places them at a location where the remote PaperVision Enterprise plug-in can retrieve the document from and then remove it. Setting the **Key Name** to the desired encryption key will cause the application server to use the specified key to encrypt the document that is being placed at the cache location. The remote plug-in will retrieve the encrypted document and decrypt it using the same key. If a remote user is not using the PaperVision plug-in, the documents will not be encrypted as there is no mechanism for those users to decrypt the documents.

Data Group Encryption – Key Name

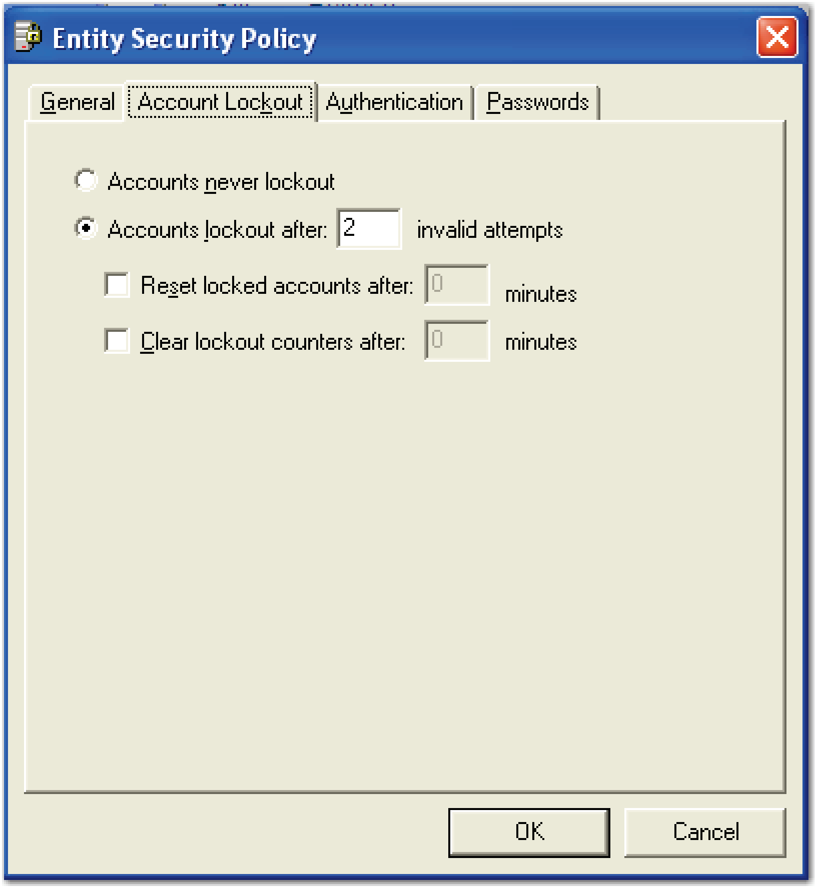
This setting specifies the encryption key that is to be used to encrypt data as it is stored (encryption of data at rest). See the section on **Data Group Encryption and Decryption** earlier in this chapter for additional information.

Inter-Process Communications – Pass Phrase

When automated external applications (such as PaperVision Enterprise Message Capture Server) connect to retrieve information (i.e. Message Capture Policies), this provides the mechanism for authentication of the remote application.

Entity Security Policy – Account Lockout Settings

The entity's Account Lockout settings allow you to determine whether accounts should be locked out or if they should lock out after a certain number of unsuccessful login attempts.



Entity Security Policy – Account Lockout

Accounts never lockout

Regardless of the number of unsuccessful login attempts, the user account is never locked out.

Accounts lockout after X invalid attempts

When a user attempts to log in X consecutive times with an invalid password (without logging in successfully), PaperVision Enterprise will automatically lock out that account.

Reset locked accounts after X minutes

When an account has been locked out, the account will automatically unlock after your specified number of minutes. Otherwise, the administrator will have to manually unlock the account.

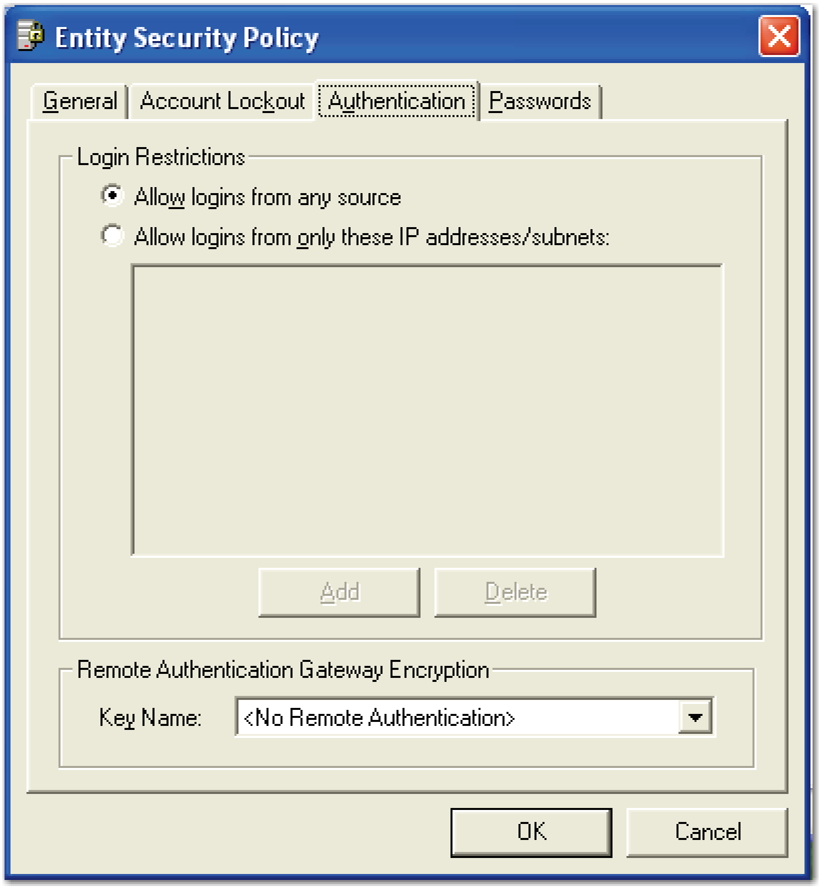
Clear lockout counters after X minutes

Every time a user attempts to log in to PaperVision Enterprise with an incorrect password, a counter is incremented to designate the number of failed attempts since the last successful login. Normally, the counter is only reset back to zero when the user

successfully logs in. However, you can have the counter reset after a specified period of time when the user has not attempted to login with an incorrect password.

Entity Security Policy – Authentication

The entity's authentication settings allow you to determine the login restrictions for PaperVision Enterprise and the type of Remote Authentication Gateway Encryption.



Entity Security Policy – Authentication

Allow logins from any source

This setting specifies that a user can log into PaperVision Enterprise from any IP address.

Allow logins only from these IP addresses/subnets

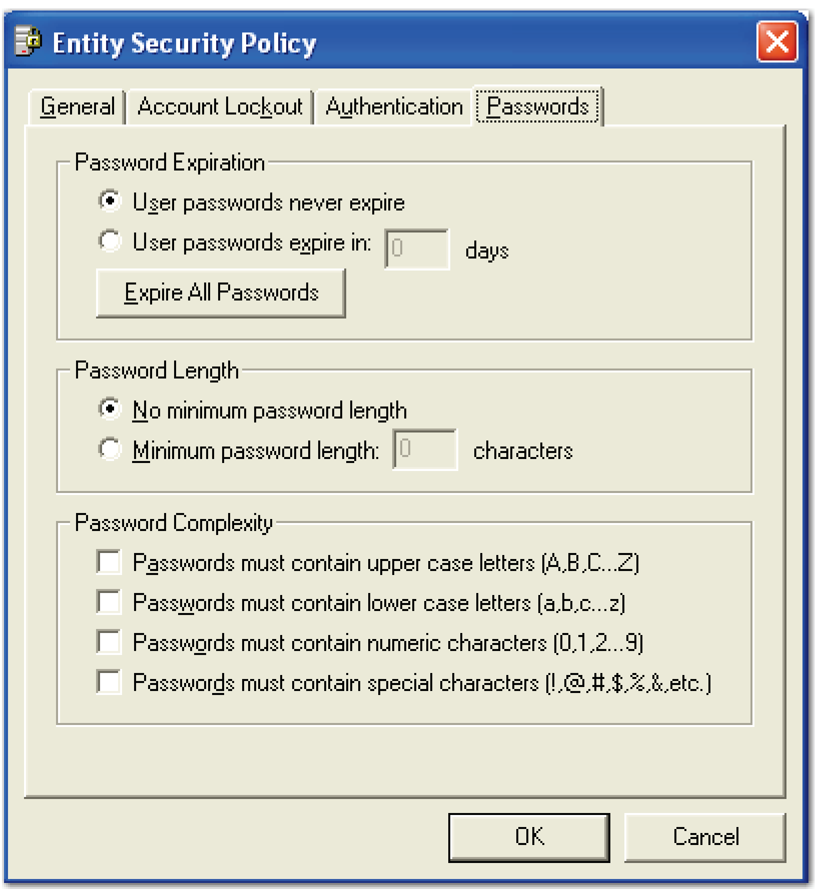
This setting limits PaperVision Enterprise access to specific IP addresses or address ranges. This is helpful in ensuring that access can only be gained from specific locations. To specify a particular address, enter the exact address. To specify a specific subnet, enter only the first X octets of the network (e.g., entering 10.1 or 10.1.0.0 will specify the entire 10.1 class B address space).

Remote Authentication Gateway Encryption – Key Name

This setting specifies the encryption key whose value matches the **Encryption Key Value** specified in the PaperVision Gateway Settings application located on the installed PaperVision Authentication Gateway Server. For additional information, see **Appendix G – Remote Authentication** in the accompanying **PaperVision Enterprise Installation and Getting Started Guide.**

Entity Security Policy – Passwords Settings

The Passwords tab contains entity-level password settings, including expiration, length, and complexity settings.



Entity Security Policy – Passwords

User passwords never expire

If this setting is enabled, user passwords will never expire for the entity.

User passwords expire in X days

Passwords will automatically expire after your specified number of days (without being changed). When users with expired passwords log into PaperVision Enterprise, they will be required to change their passwords.

Expire All Passwords

This setting causes all user passwords for the entity to expire. When any user logs in to PaperVision Enterprise, the user will have to change the current password.

No minimum password length

Users' passwords can be any length (including blank).

Minimum password length

When a user resets a password, the new password must contain your specified minimum number of characters.

Passwords Complexity

When a user resets a password, the new password must conform to the selected Password Complexity options.

Modifying the Security Policy

To change your entity security policy:

1. Select the entity, and then select **General Security > Security Policy**.
2. Double-click on **Configure Security Policy**.
3. Modify the entity's security policy, and then click **OK** to save the changes.

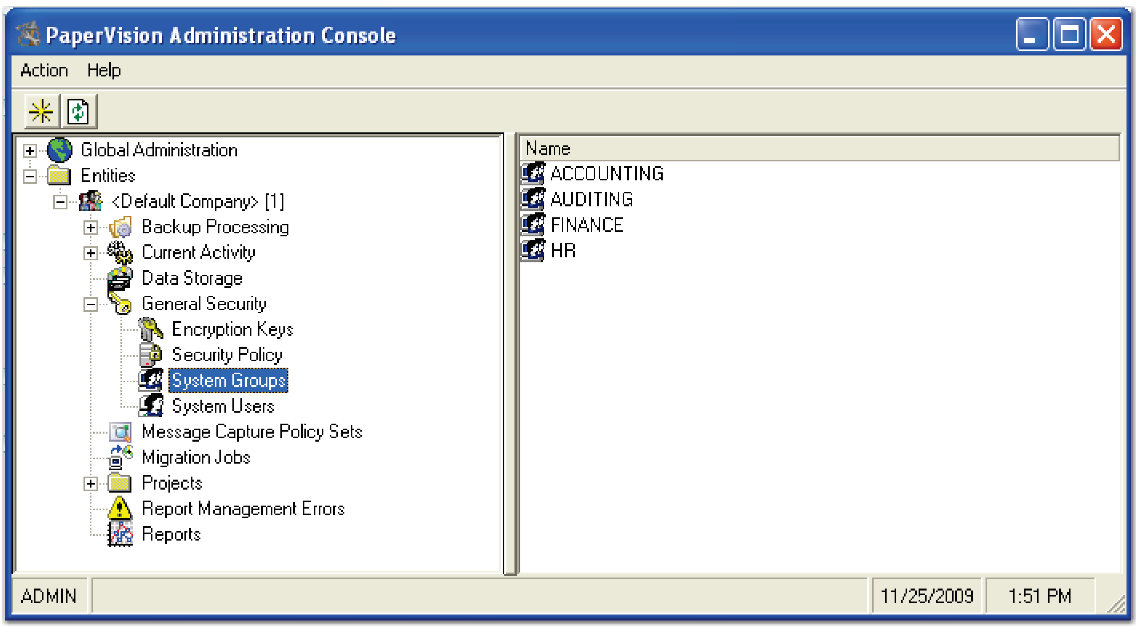
System Groups

Groups allow you to select similar users and assign a common set of access rights to those users simultaneously. In other words, you can create user accounts and rather than assign each of those users rights to a project, you can add those users to a group and assign the group rights to a project. Groups are also used in defining WorkFlows.

Creating a New Group

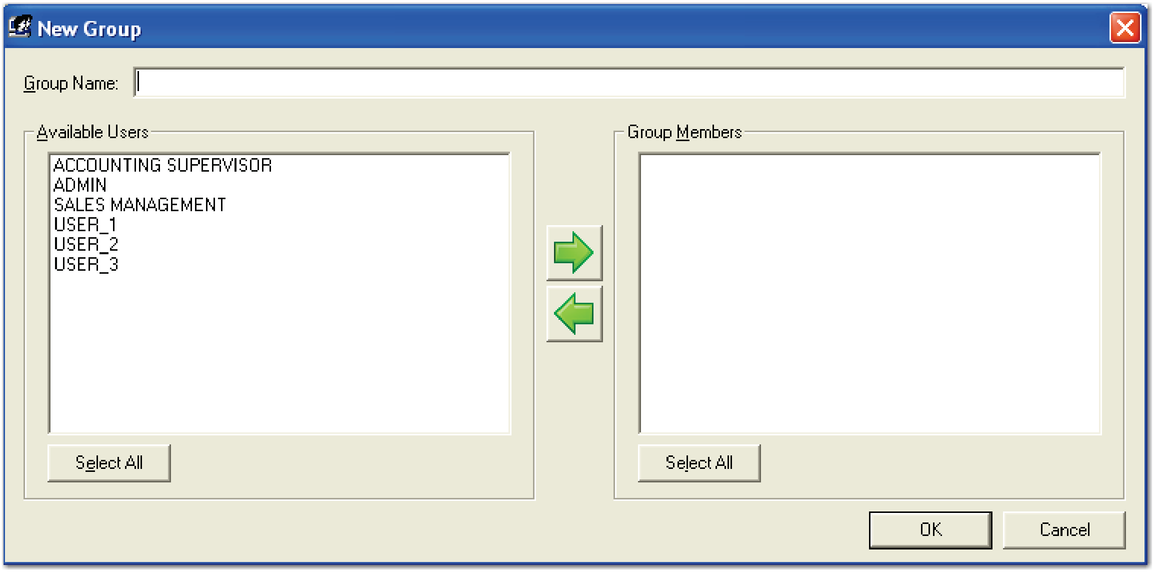
To create a new group:

1. Select the entity, and then select **General Security > System Groups**. The **System Groups** screen appears.



System Groups

2. Click the **New** icon. The **New Group** screen appears.



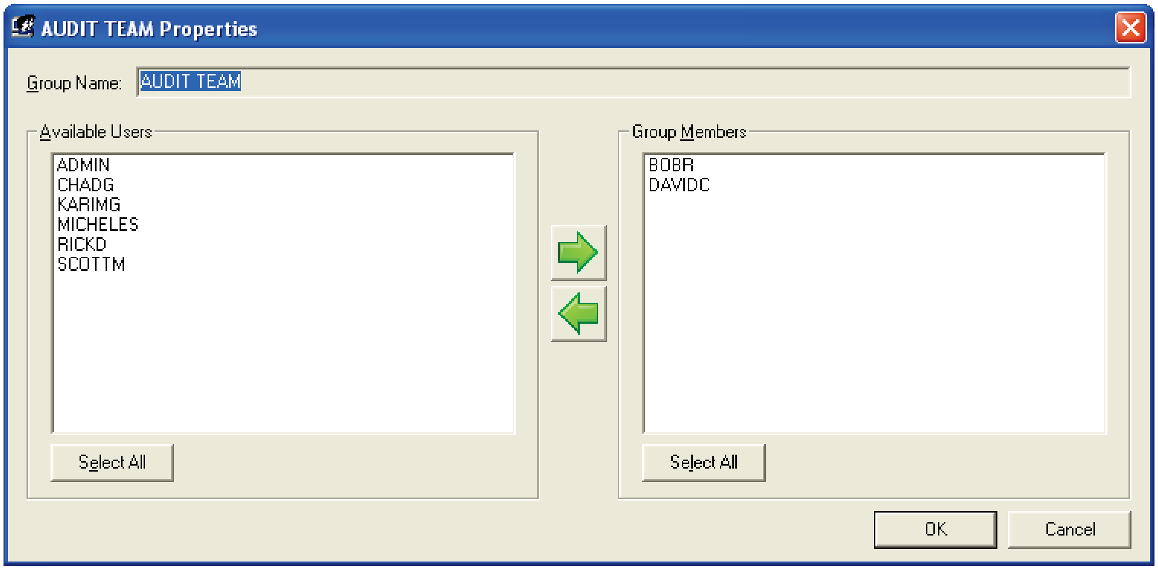
New Group

3. Enter the **Group Name**.
4. From the **Available Users** list, select the users who will comprise the new group, and then click the right arrow to move them to the **Group Members** list.
5. Click **OK** to save the new group.

Editing an Existing Group

To edit an existing group:

1. In the **System Groups** screen, select the appropriate group, and then click the **Properties**  icon. The **Group Properties** dialog box appears.



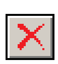
Group Properties

2. Make the necessary modifications to the group, and then click **OK** to save the modifications.

> **Note**:
> The modifications will take effect the next time the group members log in to PaperVision Enterprise.

Deleting Groups

To delete existing groups:

1. In the **System Groups** screen, select one or more groups.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

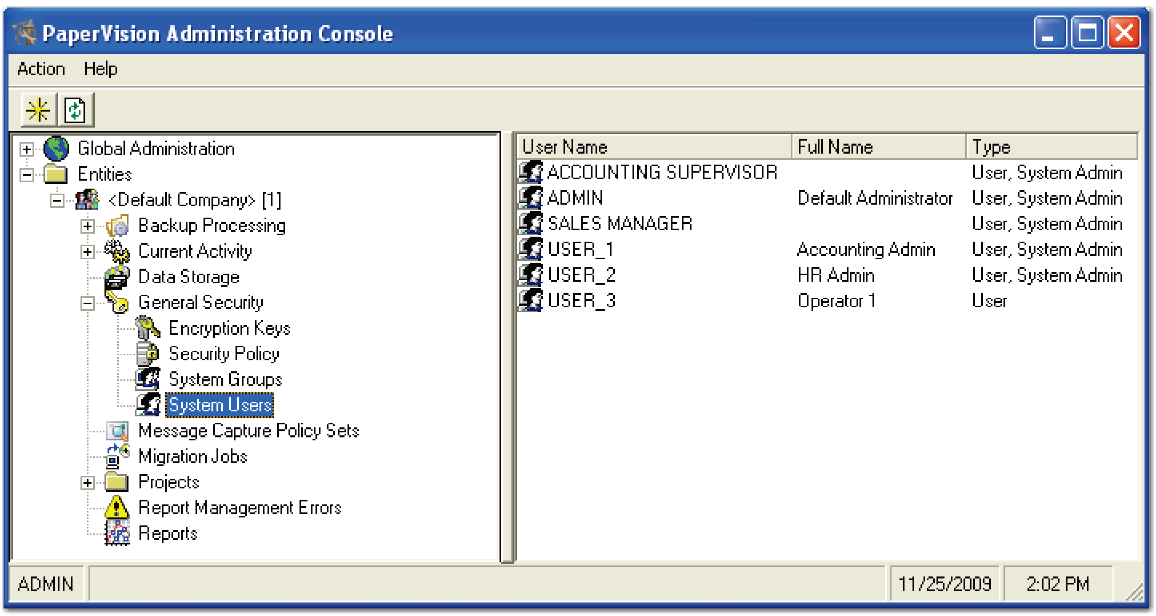
System Users

Users represent each individual user of the PaperVision Enterprise system. Although you can assign project rights to groups, you can also assign project rights to individual users. User accounts can be manually created or a pipe-delimited (or tab-delimited) text file can be used to batch-load users with (or without) their passwords and additional settings.

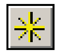
Creating a New User

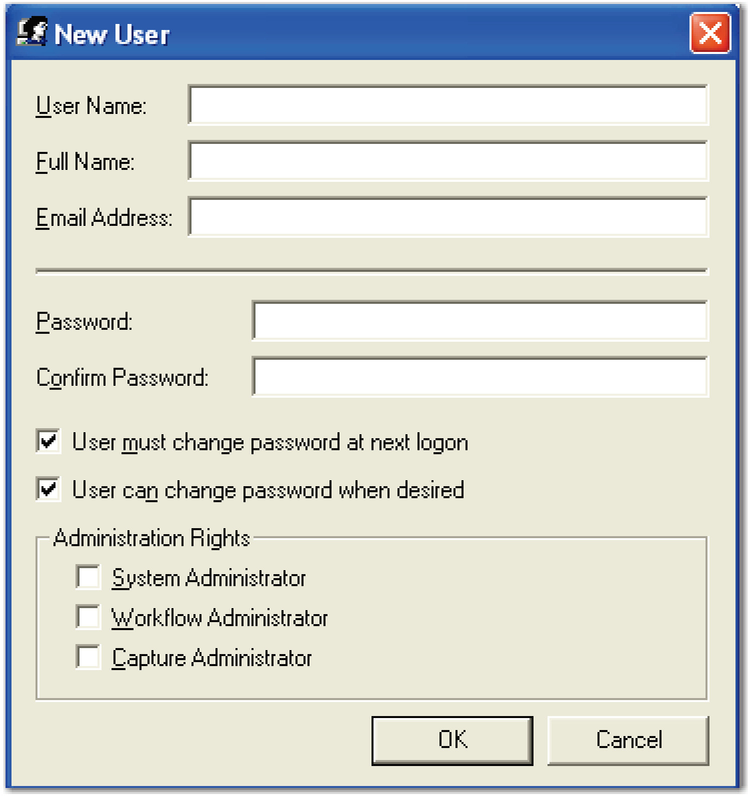
To create a new user:

1. Select the entity, and then select **General Security > System Users**. The **System Users** screen appears.



System Users

2. Click the **New**  icon. The **New User** dialog box appears.



New User

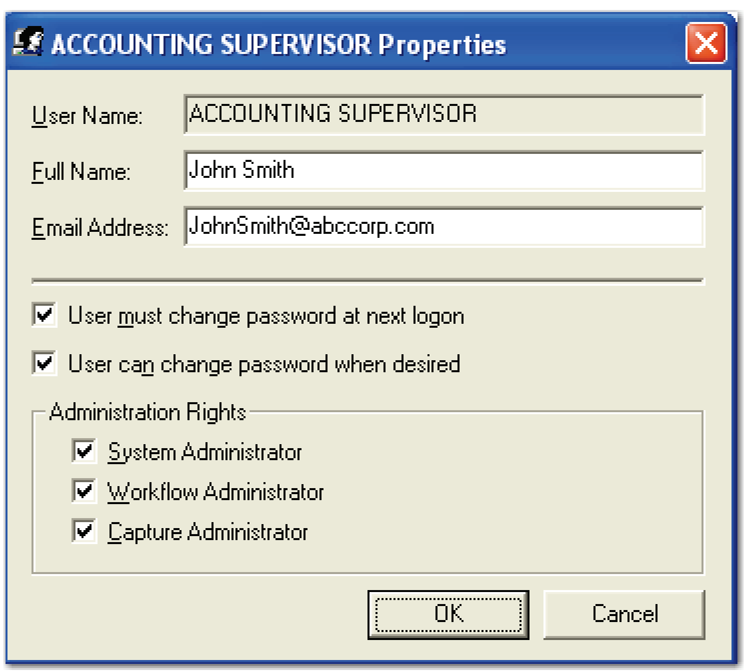
3. Enter the **User Name** that will be used to log in to PaperVision Enterprise.
4. Enter the user's **Full Name** (optional). The user's full name is used for some of PaperVision Enterprise's reporting capabilities.
5. Enter the user's **Email Address** (optional) that will be used to send notifications via email (if configured to do so).
6. Enter and confirm the initial **Password** that will be used to access the system.
7. If you want the user to change the password upon the next login, select the option, **User must change password at next logon**.
8. If you want the user to change the password at will (rather than only when forced), select the option, **User can change password when desired**.

9. If the user is an administrator, select the **Administration Rights**.
   - **System Administrators** can completely administrate a single entity and have access to all functionality in all projects for that entity.
   - **WorkFlow Administrators** are designed to provide users with access to configure WorkFlows, without giving them the "keys to the kingdom" as a system administrator. WorkFlow administrators do not have access to documents or functions in any projects by default and must be granted access to those projects explicitly. They can, however, configure WorkFlow definitions for any project, as well as view WorkFlow history and WorkFlow status reports. If they are granted access to view documents within a project, a WorkFlow administrator can create new WorkFlow instances for a particular document as well as view the WorkFlow status for a document.
   - **Capture Administrators** can define Capture Jobs in the PaperVision Capture product.
10. Click **OK** to save the new user.

Editing an Existing User

To edit an existing user:

1. In the **System Users** screen, select the appropriate user, and then click the **Properties**  icon. The **User Properties** dialog box appears.

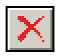


User Properties

2. Make the necessary modifications to the user account, and then click **OK**. The modifications will be saved and will take effect the next time the user logs into PaperVision Enterprise.

Deleting Users

To delete existing users:

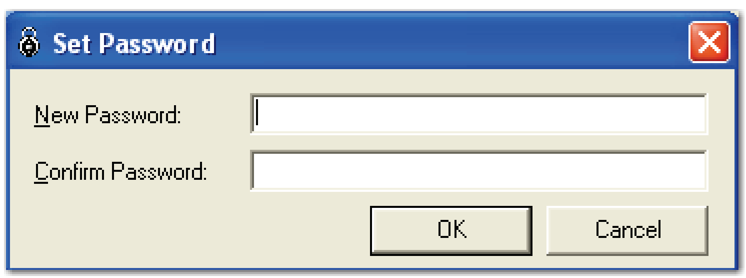
1. In the **System Users** screen, select one or more users.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Setting a User's Password

In some scenarios, it may be necessary to set (or change) a user's password.

To set a user's password:

1. In the **System Users** screen, select the user whose password should be set, and then select the **Set Password**  icon. The **Set Password** dialog box appears.



Set Password

2. Enter and confirm the new password for the user (passwords are case-sensitive).
3. Select **OK** to set the new password.

Importing Users

User lists can be imported, populating most of the user's configuration data. Users can be imported using a pipe-delimited ("|") or tab-delimited text file. Each line of the text file can contain the following information (in this specific order):

- User Name
- Password
- Full Name
- Email Address
- System Administrator (if value is 1)
- Other Administrator (if value is 1, 2, or 3)

> **Note**:
>
> In the **Other Administrator** column, a WorkFlow Administrator has a value of 1; a Capture Administrator has a value of 2; a WorkFlow and Capture Administrator has a value of 3.

- User must change password at next login (if value is 1)
- User can change password when desired (if value is 1)

Only the first two fields (user name and password) are required on each line of text. If fields are not specified, the default values are used. Below is a sample of an import file:

```
user1|password1|Test|test@test.com|0|1|1|1
user2|password2|Test2|test2@test.com|0|3|1|1
```

To import users:

1. In the **System Users** screen, select **Action > All Tasks** > **Import User/Password List**.
2. Select the file containing the user information. PaperVision Enterprise will import the users and display the number of new users that were added.

> **Note**:
>
> Existing users will not be recreated.

Migration Jobs

PaperVision Enterprise facilitates the collection of documents from your repository into external data groups (CD-ROMs, etc.). This feature becomes particularly useful in applications where specific sets of data are required to give to an end-user (e.g., for legal projects where an attorney extracts information about a specific case and places it on a CD-ROM to take to trial).

Migrating information requires three steps:

1. A user tags the documents for migration in the PaperVision Enterprise Web Client.
2. A user submits the migration job in the PaperVision Enterprise Web Client.
3. A system administrator performs the migration process.

Once the user has submitted the migration job, the administrator must run the job to extract the selected/tagged documents and copy them to a location which can be burned onto CD-ROM (or copied onto some other media). The extracted information is formatted into a standard PaperFlow™ data group.

Note:

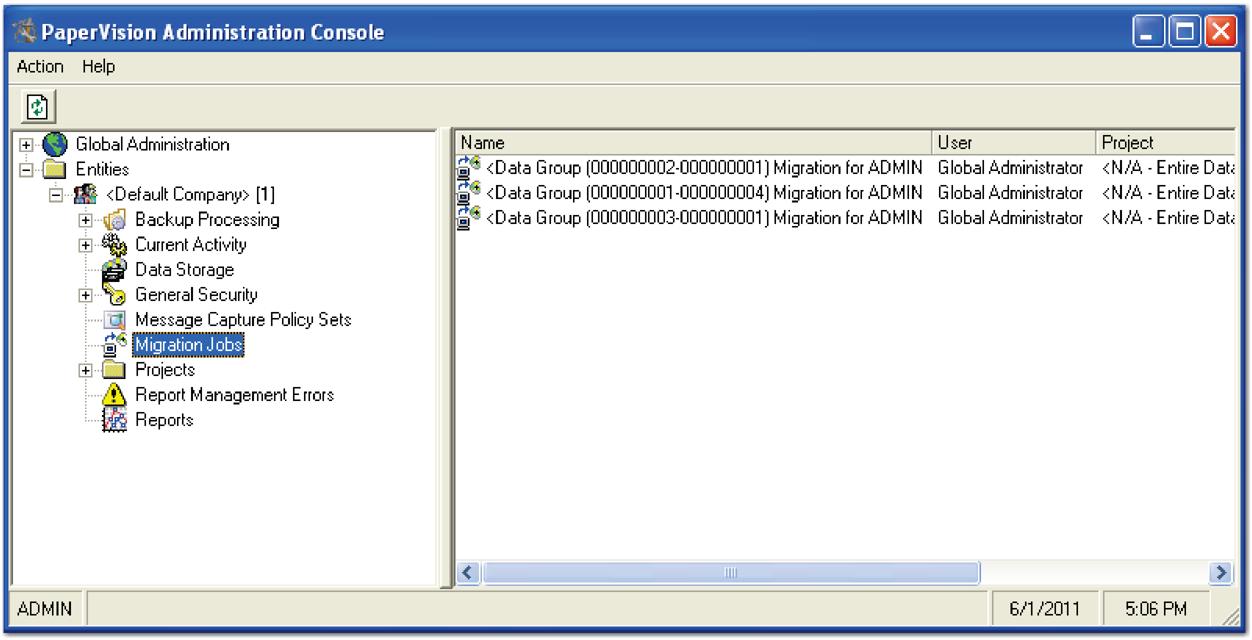
COLD/ERM documents and C.A.R. references are not supported for migration. Additionally, migration jobs do not export document annotations.

If the optional PaperVision Distribution Assistant component has been licensed, the PaperVision Distribution Assistant software will automatically be copied into any migrated data groups during the migration process. If any errors occur when locating document files during the migration process, the errors are written to a **Migration Errors X.txt** file in the data group's directory.

Running a Migration Job

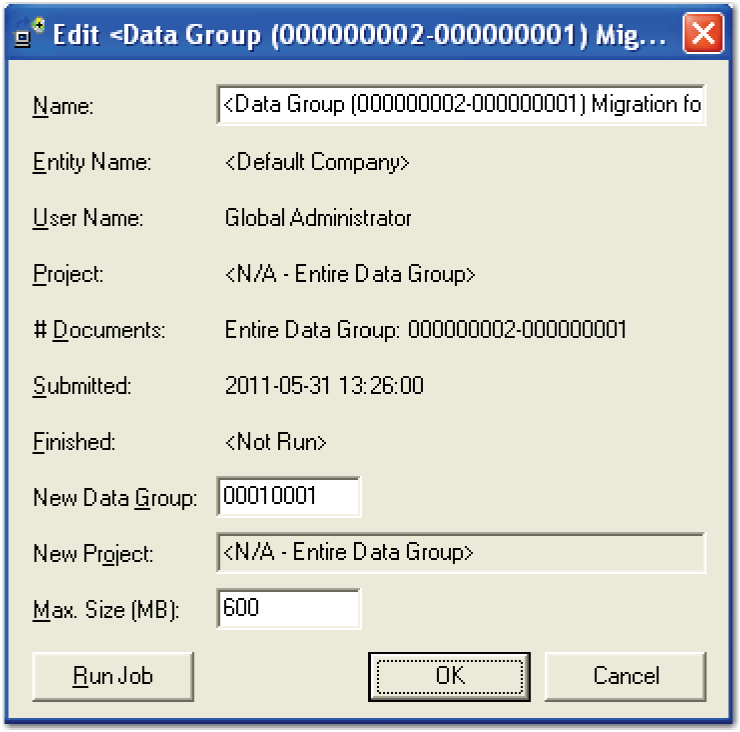
To run the migration job:

1. Select the entity, and then select **Migration Jobs**. The **Migration Jobs** screen appears.



Migration Jobs

2. Select the appropriate migration job, and then click the **Properties** icon. The **Migration Job Properties** dialog box appears.



Migration Job Properties

3. Enter the new **Name** of the migration job.
4. Enter the **New Data Group** name.
5. Enter the name of the **New Project** that will be created.
6. Enter the **Max Size (MB)** of the new migration data group. When the maximum size is reached, a new data group will automatically be created (incrementing the data group name).
7. Click **Run Job** to perform the migration.

PaperVision Enterprise will extract the requested documents and perform the migration, making no changes to the documents in the repository. Once the migration is completed, a notification will be sent to the global and entity administrators (as well as the submitting user) to notify them that the migration job has been completed.

Deleting Migration Jobs

When migration jobs are run, they are not automatically deleted in case they need to be run again. They must be explicitly deleted by the submitting user or the administrator.

To delete a migration job:

1. In the **Migration Jobs** screen, select one or more migration jobs.
2. Click the **Delete**  icon.
3. Select **Yes** to confirm the deletion.

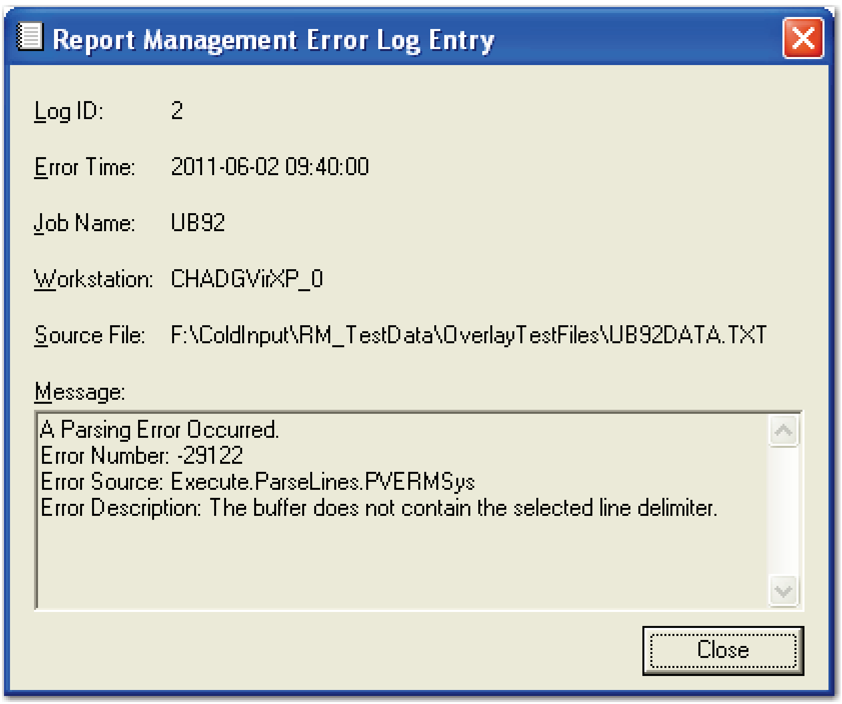
Report Management Errors

Administrators can view report management errors for all report management jobs for their entity. When the job is processed, any errors that occur are written to the report management error log.

Viewing an Error Log Entry

To view an error log entry:

1. Select the entity, and then select **Report Management Errors**.
2. Double-click on the error log entry to view. The **Report Management Error Log Entry** dialog box appears.



Report Management Error Log Entry Properties

3. Click **Close**.

Exporting Selected Error Log Entries

You can export selected error log entries to an XML file.

To export selected error log entries:

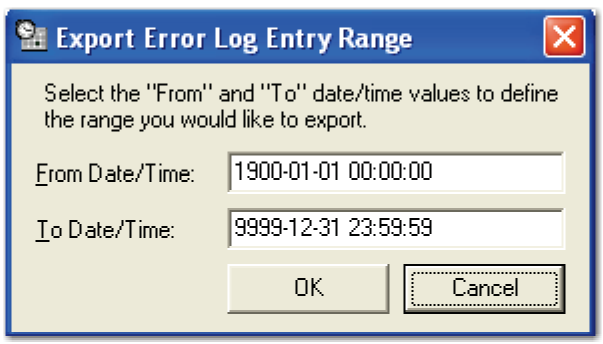
1. In the **Report Management Errors** screen, select one or more entries, and then click the **Export Selected Item(s)** icon.
2. Click **Yes** to confirm the export.
3. In the **Export Log** dialog box, locate the directory where the export will be written.
4. Enter the file name, and then click **Save.** You will be notified where the file was written.

Exporting a Range of Error Log Entries

You can export a range of error log entries to an XML file.

To export a range of import log entries:

1. In the **Report Management Error** screen, click the **Export Range** icon. The **Export Error Log Entry Range** dialog box appears.

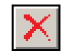


Export Error Log Entry Range

2. Enter the date range of the log entries to export, and then click **OK**. Enter dates in the "yyyy-mm-dd hh:nn:ss" format.
3. Click **Yes** to confirm the export.
4. In the **Export Log** dialog box, locate the directory where the export will be written.
5. Enter the file name, and then click **Save.** You will be notified where the file was written.

Deleting Selected Error Log Entries

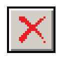
To delete selected error log entries:

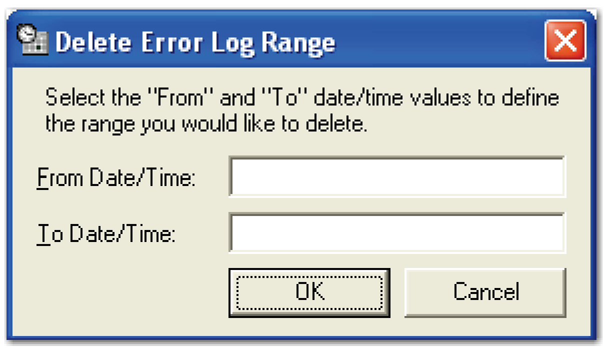
1. Select the entity, and then select **Report Management Errors**.
2. Highlight the entries to delete, and then click the **Delete Selected Item(s)**  icon.
3. Click **Yes** to confirm the deletion.

Deleting a Range of Error Log Entries

You can also delete a range of error log entries.

To delete a range of error log entries:

1. Select the entity, and then select **Report Management Errors**.
2. Select the **Delete Range**  icon. The **Delete Error Log Range** dialog box appears.



Delete Error Log Range

3. Enter the date range of the log entries to delete, and then click **OK**. Enter dates in the "yyyy-mm-dd hh:nn:ss" format.
4. Click **Yes** to confirm the deletion.

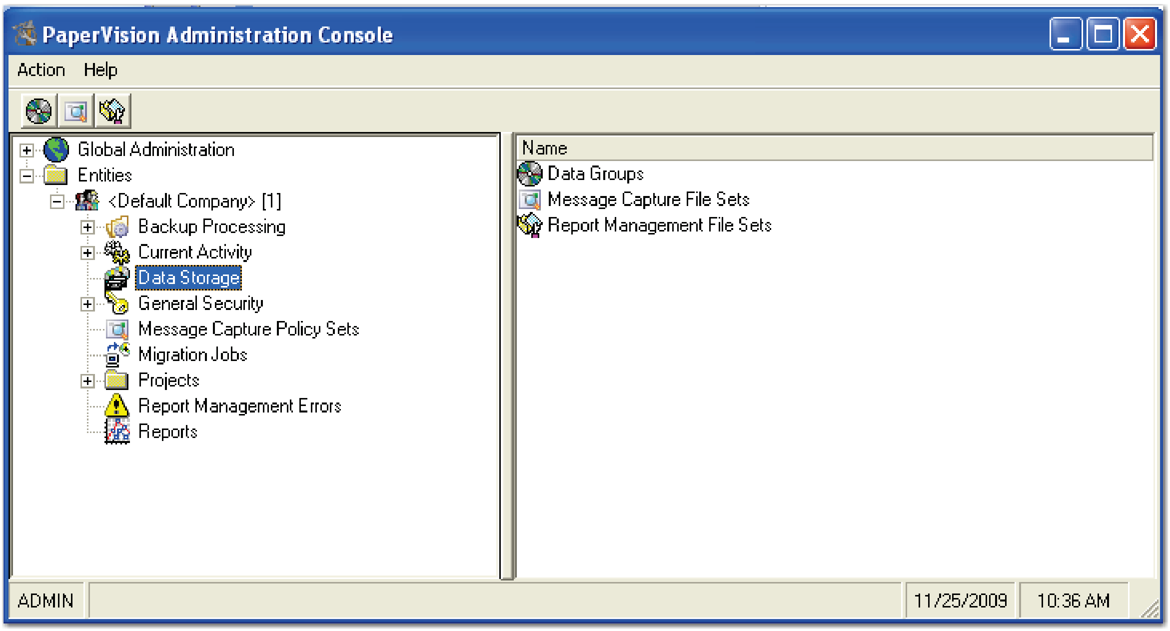
Report Management File Sets

Report Management file sets are created as the PaperVision Enterprise Report Management processing engine parses COLD/ERM files. For more information on file sets and their contents, see the **creates** "file sets section in the Report Management chapter.

Viewing Available Report Management File Sets

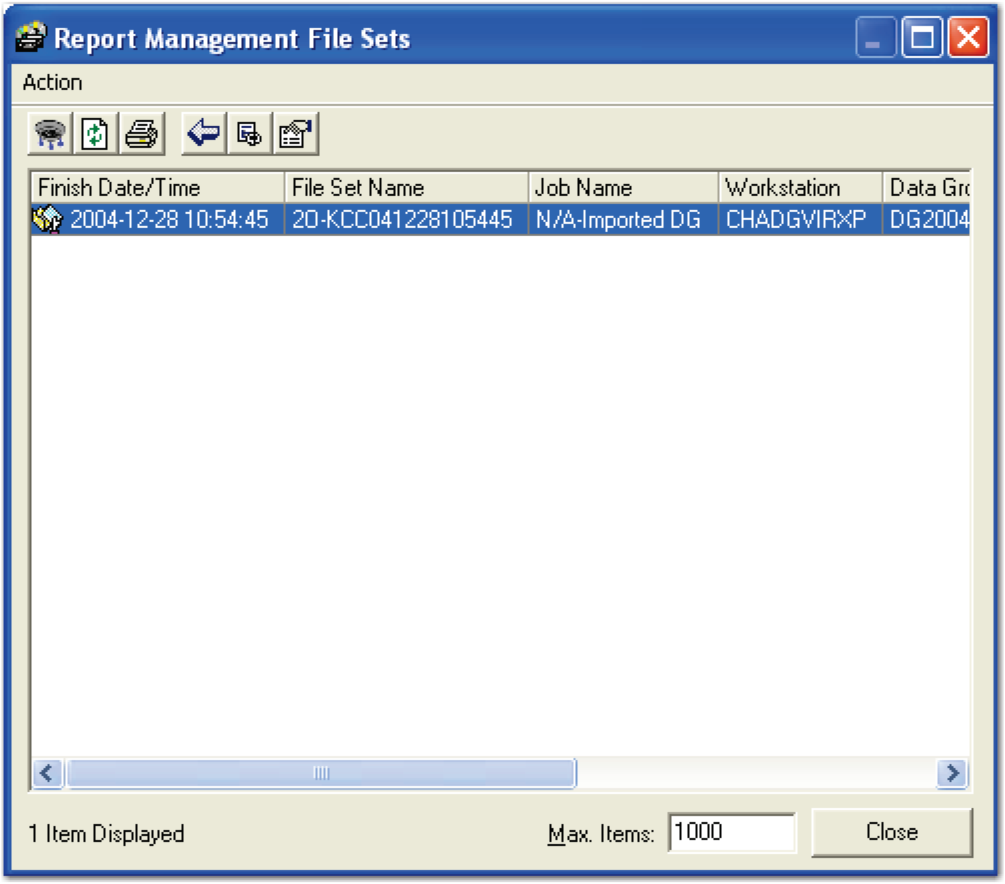
To view the available report management file sets:

1. Select the entity, and then select **Data Storage**. The **Data Storage** screen appears.



Data Storage

2. Double-click on **Report Management File Sets**. The **Report Management File Sets** screen appears.



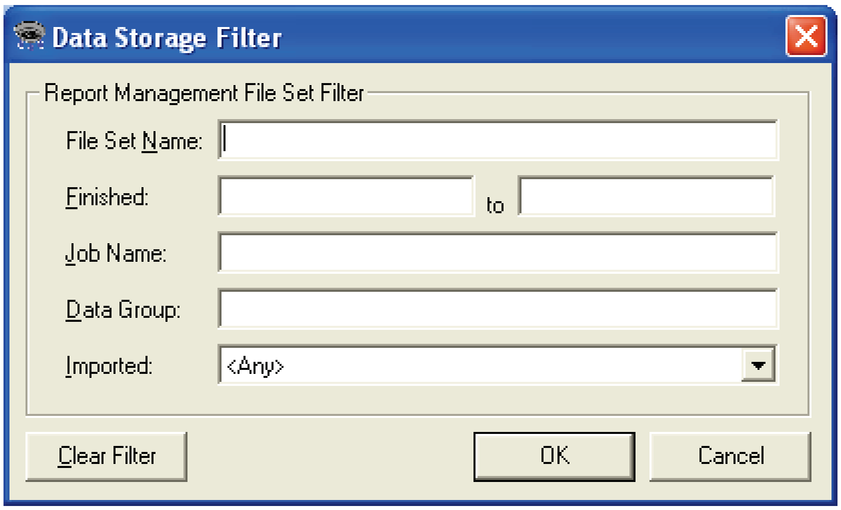
Report Management File Sets

Filtering the Report Management File Set List

When thousands of file sets exist, you can filter the list to only display file sets meeting your specified criteria.

To filter the file set listing:

1. In the **Report Management File Sets** screen, click the **Filter** icon. The **Data Storage Filter** dialog box appears.



Data Storage Filter

2. Enter the desired filter criteria, and then select **OK**. Enter dates in the "yyyy-mm-dd hh:nn:ss" format

> **Note**:
>
> If the results have a filter applied, the word "Filtered" will appear at the bottom of the screen.

Rolling Back a File Set

You can roll back a file set to remove the file set's data from the system, making the data no longer available for retrieval. Additionally, if the file set is in a Read/Write data group, its files will be removed from the data group.

To roll back a file set:

1. In the **Report Management File Sets** screen, select one or more file sets.
2. Click the **Roll Back** icon.
3. Select **Yes** to confirm the roll-back operation.

Exporting File Set Information

You can export file set information into an XML file for further analysis.

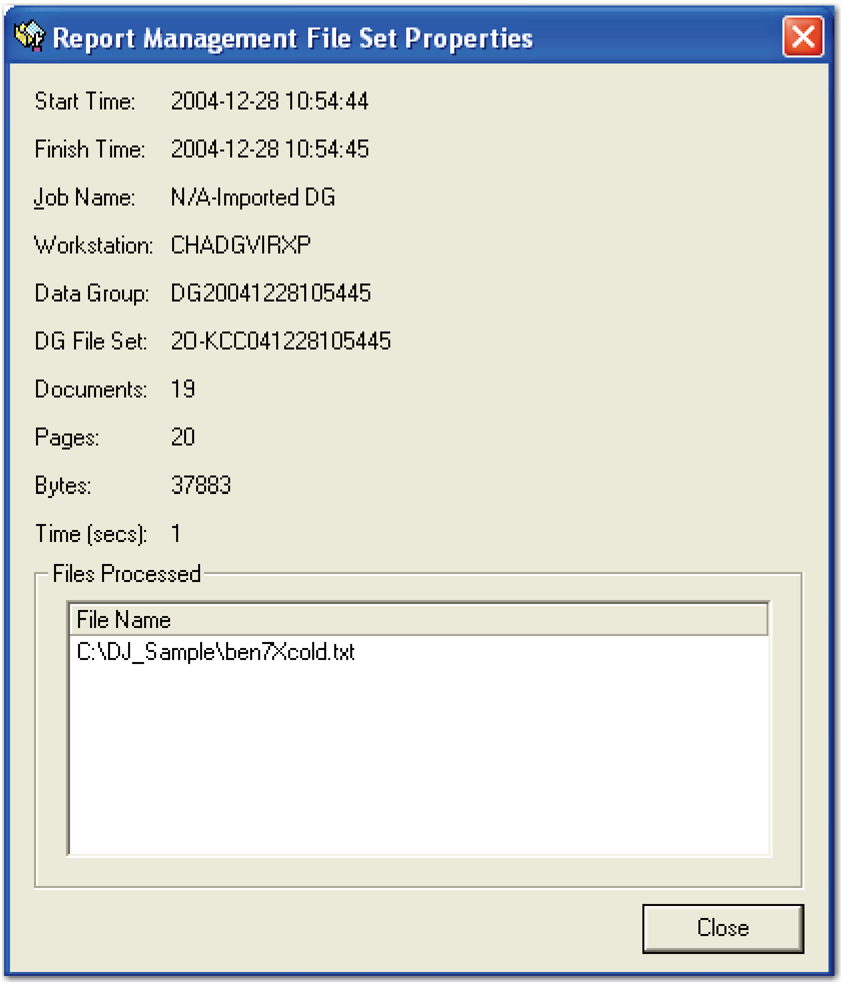
To export file set information:

1. From the **Report Management File Sets** screen, select the file set(s) to export.
2. Click the **Export**  icon.
3. Select **Yes** to confirm the export.
4. In the **Export File Set Entries** dialog box, locate the directory where the export will be written.
5. Enter the file name for the export.
6. Click **Save**. A message will notify you where the export was written.

Viewing File Set Properties

To view file set properties:

1. From the **Report Management File Sets** screen, select the file set to view.
2. Click the **Properties** icon. The **Report Management File Set Properties** dialog box appears.



Report Management File Set Properties

3. Select **Close** when finished viewing the information.

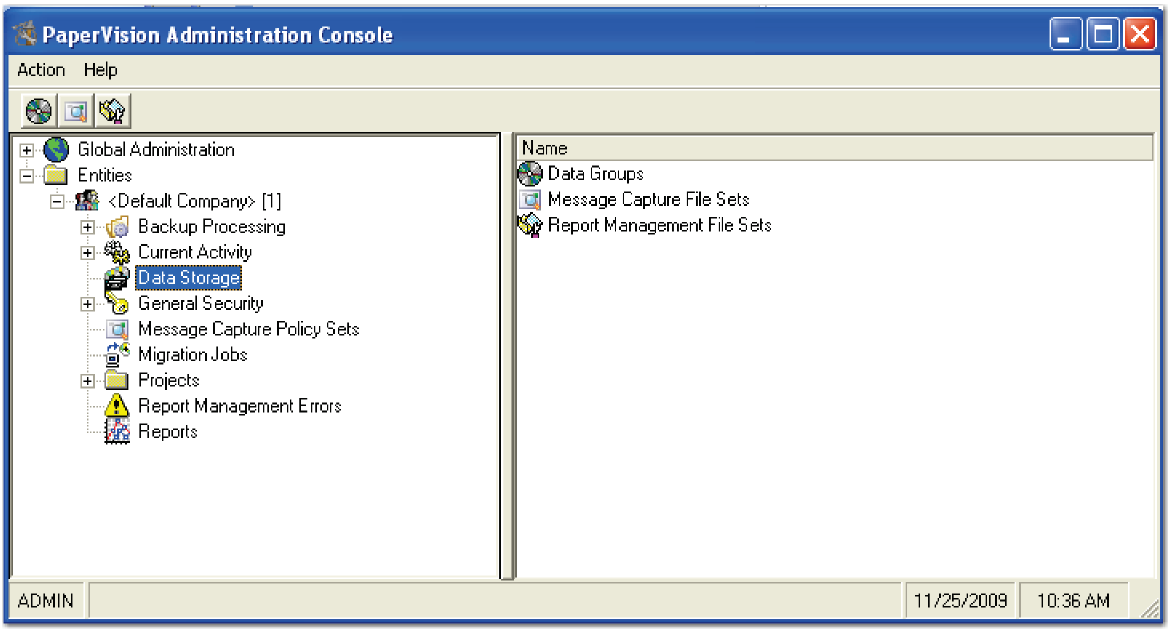
Message Capture File Sets

Message Capture file sets are created as the PaperVision Message Capture Server processing engine parses message files. File sets, and their contents, are discussed in greater detail in the **File Sets** section of the Message Capture chapter.

Viewing Message Capture File Sets

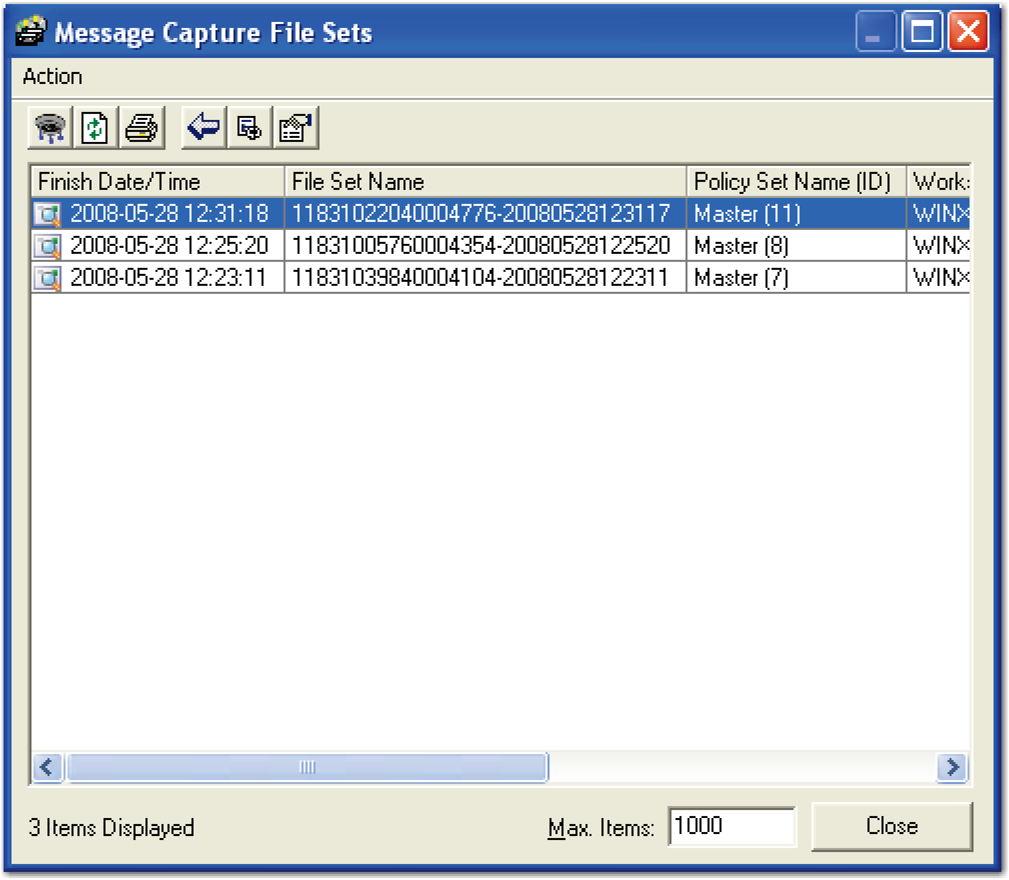
To view message capture file sets:

1. Select the entity, and then select **Data Storage**. The **Data Storage** screen appears.



Data Storage

2. Double-click on **Message Capture File Sets**. The **Message Capture File Sets** screen appears where you can filter, print, roll-back, and export Message Capture File Sets.



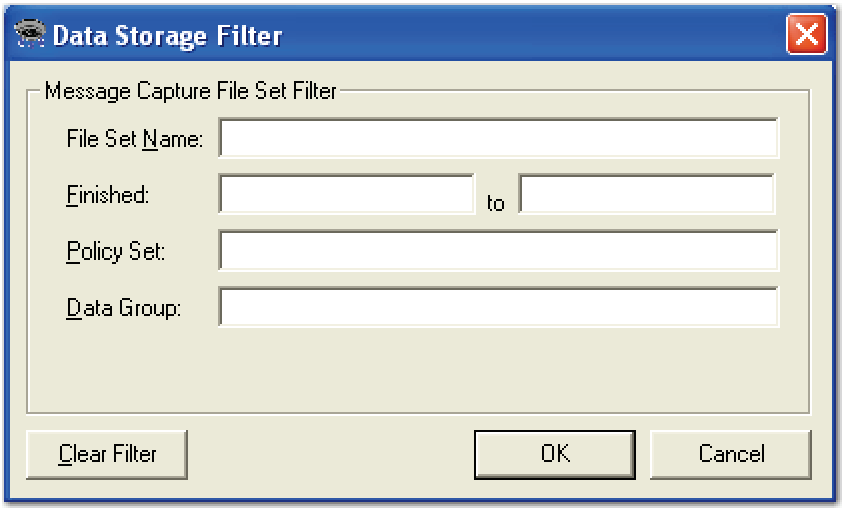
Message Capture File Sets

Filtering the Message Capture File Set List

When thousands of file sets exist, it is often desirable to filter the list that is being displayed.

To filter the file set listing:

1. From the **Message Capture File Sets** screen, click the **Filter**  icon. The **Data Storage Filter** dialog box appears.



Data Storage Filter

2. Enter the filter criteria, and then click **OK**. Enter dates in the "yyyy-mm-dd hh:nn:ss" format. The file sets that meet the specified filter criteria will be displayed.

> **Note**:
>
> If the results have a filter applied, the word "Filtered" will appear at the bottom of the screen.

Rolling Back a File Set

You can roll back a file set to have the file set's data removed from the system, making its data no longer available for retrieval. Additionally, if the file set is in a Read/Write data group, its files will be removed from the data group.

To roll back a file set:

1. From the **Message Capture File Sets** screen, select one or more file sets.
2. Click the **Roll Back**  icon.
3. Select **Yes** to confirm the roll-back and complete the operation.

Exporting File Set Information

You can export file set information into an XML file for further analysis.

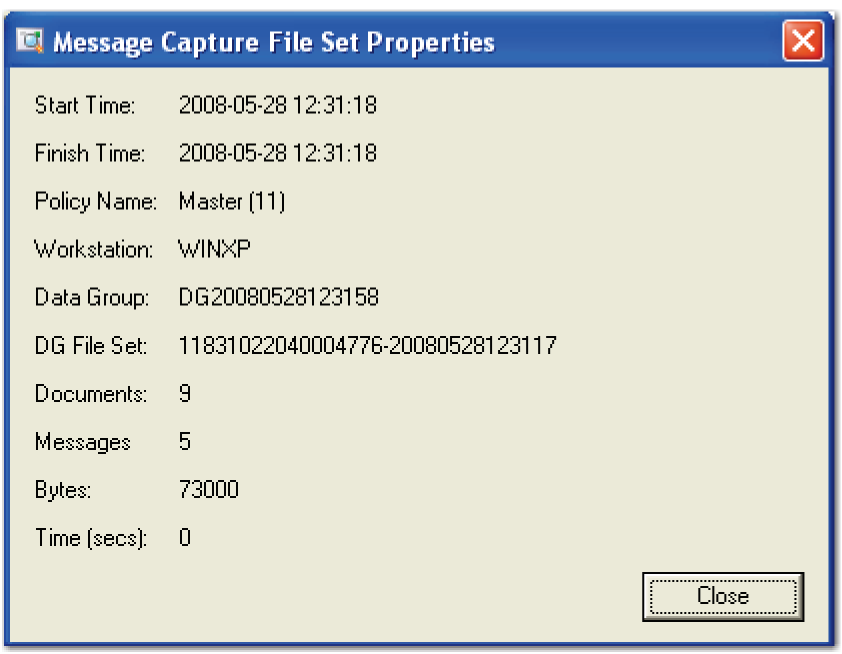
To export file set information:

1. From the **Message Capture File Sets** screen, select one or more file sets.
2. Click the **Export**  icon.
3. Select **Yes** to confirm the export.
4. In the **Export File Set Entries** dialog box, locate the directory where the export will be written.
5. Enter the file name for the export.
6. Click **Save**. A message will notify you where the export was written.

Viewing File Set Properties

To view file set properties:

1. In the **Message Capture File Sets** screen, select the appropriate file set.
2. Click the **Properties**  icon. The **Message Capture File Set Properties** dialog box appears.



Message Capture File Set Properties

3. Select **Close** when finished viewing the information.

Chapter 5 – Project Administration

A project is a logical grouping of documents based on a common indexing schema. When a data group is imported and the project referenced in the data group does not exist, the project is automatically created. Additionally, projects can be manually created. Projects support up to 200 named index fields per document.

> **Important**!
>
> Microsoft SQL Server supports maximum row sizes of 8060 characters. If the length of the combined index field data for a document exceeds 8060 characters, SQL Server cannot support it, and the system displays an alert.

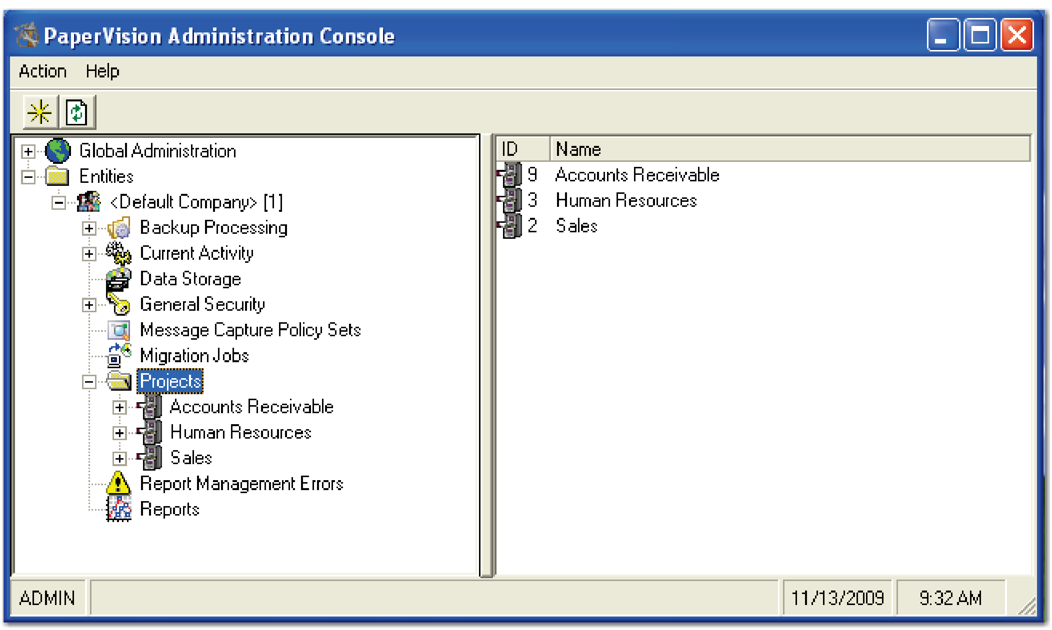
Creating New Projects

System administrators can create, delete and edit projects within the entity. Deleting a project will remove all of the project-related data from the system. However, security audit data will be left intact for reporting purposes. Furthermore, deleting projects does not delete physical documents from their respective data groups.

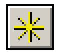
> **Tip:**
>
> In addition to the toolbar commands and menu options available for each project setting, you can also right-click on the appropriate setting, and then select the operation from the context menu.

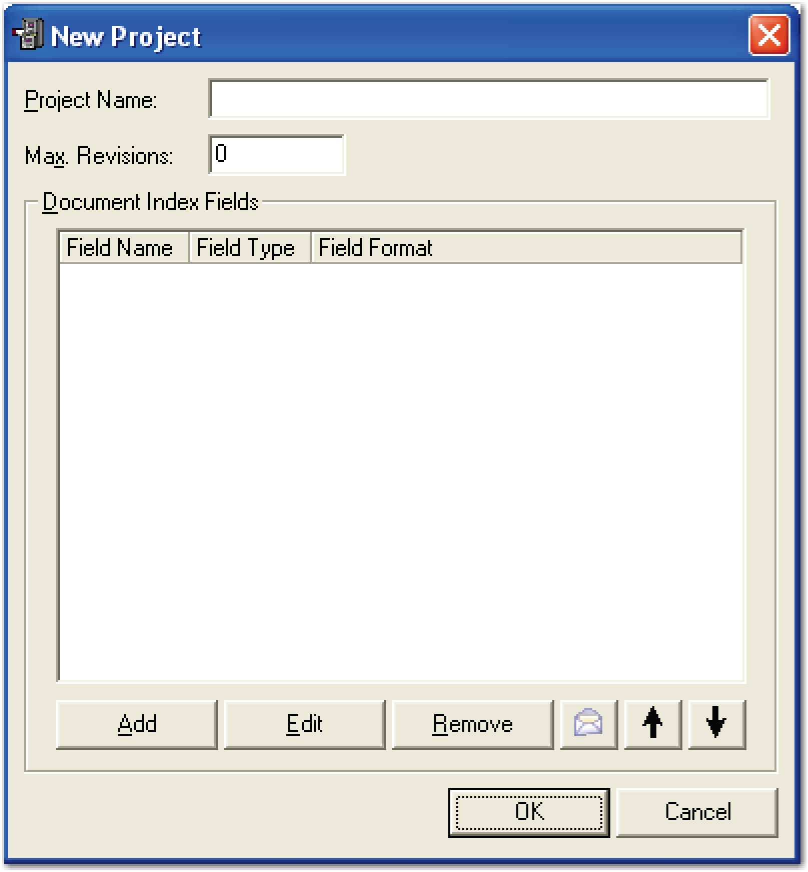
To create a new project:

1. Select the entity, and then select **Projects**. The **Projects** screen appears.



Projects

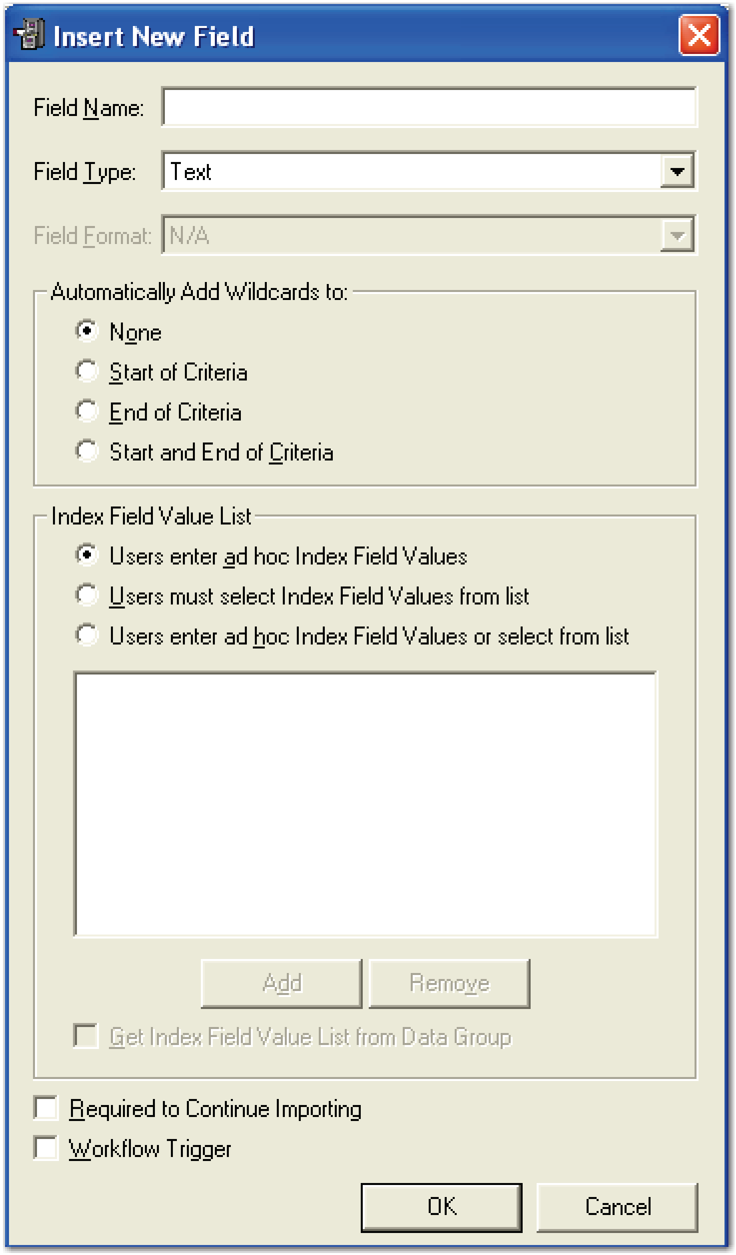
2. Click the **New**  icon. The **New Project** dialog box appears.



New Project

3. Enter the new **Project Name**.
4. Enter the **Max. Revisions** value. This value specifies how many revisions of a document are kept when a document is checked back in (oldest versions are automatically removed). If this value is set to zero, all revisions are kept.
5. If you intend to use this project to hold messages processed by the PaperVision Capture Server, click the **Add Email Capture Fields**  icon to have the pre-defined fields automatically added to the project. You can remove any undesired fields afterwards.

6. Click **Add** to add a new index field. The **Insert New Field** dialog box appears.



Insert New Field

7. Enter the name of the new index field.

8. Select the type of index field.
   - **Boolean**: Stores boolean values such as yes/no, true/false, etc.
   - **Currency**: Stores currency (monetary) values.
   - **Date**: Stores date/time values between Jan. 1, 1753 and Dec. 31, 9999.
   - **Double Number**: Stores numbers too large for using a Number field or numbers that require decimal places.
   - **Long Text**: Stores textual data that is greater than 255 characters in length. Long text values are not "indexed" by the database server and, as such, can take a significant amount of time to search when there are a large number of records.
   - **Number**: Stores whole number values between -2,147,483,648 and 2,147,483,647
   - **Text**: Stores textual data that does not exceed 255 characters in length
   - **Text(900)**: Stores textual data that does not exceed 900 characters in length

     > **Important**!
     >
     > When documents containing this field type are migrated, they will be truncated to 255 characters since migration databases do not support this field type.

9. If the selected index field type allows formatting, select the format in which to display the index field's data. Boolean, Currency, Date, and Double Number field types support custom field formats. To create a new custom field format, type directly in the **Field Format** combo box.
   - You must enter custom Boolean field formats with a slash mark (forward slash) between the two options. Boolean values (e.g., True/False) are represented as positive/negative (+/-) values. So, the server passes True (positive)/False (negative) values as 1 (True)/0 (False).
   - Valid currency symbols include the Dollar ($), Pound (£), Euro (€), Comma (,), Period (.), etc.
10. Under normal circumstances, PaperVision Enterprise requires the user to manually add any wildcard characters to search criteria. Select an **Automatically Add Wildcards** value, which causes PaperVision Enterprise to automatically add wildcard characters in the designated position of the field if it is used during a search.
11. PaperVision Enterprise can optionally limit or provide suggestions for index field values during searching, manually adding new documents, and altering document index fields.
    - To force the user to select a value from a specific list of possible values, select **Users must select Index Field Values from list.**
    - To allow users to select from a pre-defined list or enter any other value, select **Users enter ad hoc Index Field Values or select from list.**

12. To use pre-populated index field value lists, select the **Add** button to manually add values to the list.

> **Tip**:
>
> To enter multiple values, separate each index value by the tilde (~) character.

13. To have the pre-populated index field value list retrieved from the list provided in a PaperFlow data group, select **Get Index Field Value List from Data Group.**
14. As a data group is imported, PaperVision Enterprise can verify that index field information has been provided in the incoming data. By selecting **Required to Continue Importing,** imports will immediately stop once a document that has a blank field is encountered. This is particularly useful where a data group being imported has not been fully indexed.

> **Note**:
>
> Importing a PaperFlow data group with a new project that has not been created in PaperVision Enterprise will populate this option automatically if PaperFlow's **Required for Processing** option has been set. Also, this option does not apply to PVERM (PaperVision Enterprise Report Management) data groups, as the file sets within them cannot be partially imported.

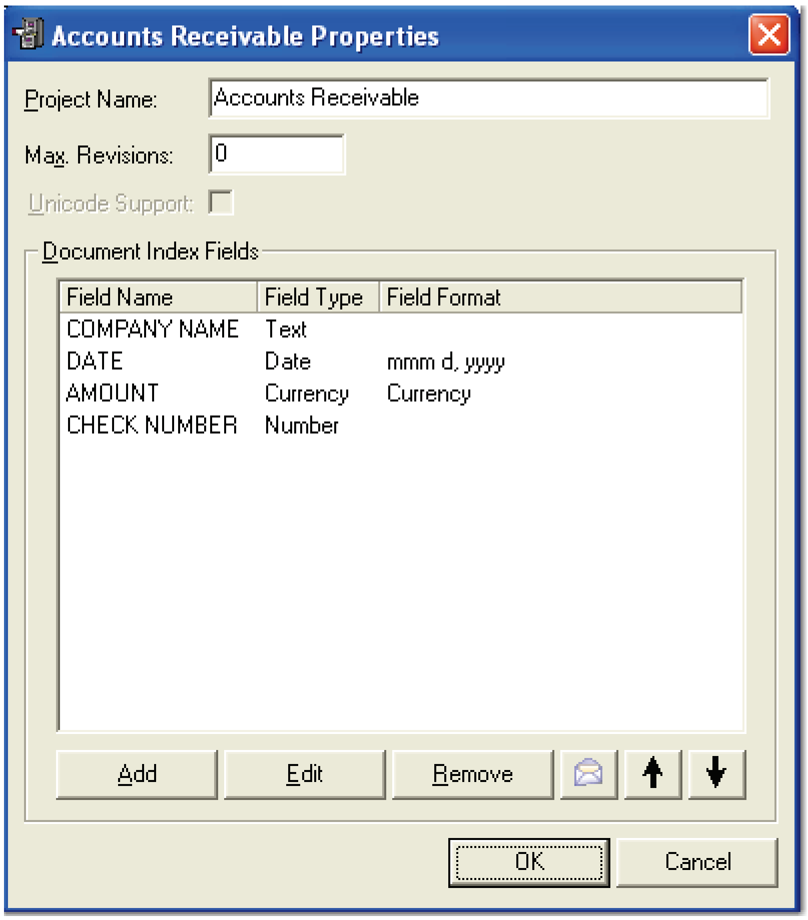
15. If the index field should initiate a WorkFlow instance for a document, select **WorkFlow Trigger.** For more information, see the description for the **Document Selection Methods**.
16. Select **OK** to save the new index field.
17. Repeat steps 6 through 15 for any additional index fields.
18. You can modify the order that the index fields are listed by using the **Move Field Up**  and **Move Field Down**  icons.
19. Click **OK** to create the project.

Editing an Existing Project

Index fields can be added or removed at any time (even after the project contains documents). If a new index field is added, all of the existing documents in that project will have that index field value filled with [Blank] values. If an index field is removed, all of the existing index field data for that particular field will be deleted.

To edit an existing project:

1. In the **Projects** screen, select the appropriate project.
2. Click the **Properties**  icon. The **Project Properties** dialog box appears.



Project Properties

3. Make the necessary changes to the project, and then click **OK**.

> **Note**:
>
> When you add or remove an index field, the changes take place immediately (you will be forced to select **OK**).

Deleting Projects

Deleting a project will remove all of the project-related data from the system. However, security audit data will be left intact for reporting purposes. Furthermore, deleting projects does not delete physical documents from their respective data groups.

To delete projects:

1. In the **Projects** screen, select one or more projects.
2. Click the **Delete** icon.
3. Select **Yes** to confirm the deletion.

Rebuilding Full-Text for Projects

PaperVision Enterprise offers the capability to submit a project to have its full-text indexes rebuilt. This is useful if the full-text database has become corrupt or the administrator wants to change whether or not external and COLD documents are to be full-text indexed. Full-Text rebuilds are submitted as maintenance jobs to be processed by the automation service. When they are processed, a separate full-text database is created and populated. Once the rebuild has completed, the old database is removed and the new database is referenced.

To rebuild full-text for a project:

1. In the **Projects** screen, select one or more projects.
2. Click the **Submit for Full-Text Rebuild** icon.
3. Select **Yes** to confirm the rebuild and submit the maintenance job.

Compressing Full-Text for Projects

PaperVision Enterprise offers the capability to submit a project to have its full-text indexes compressed. This is useful if large amounts of information have been deleted from the full-text database (such as in purging data groups). When data is deleted from the full-text database, it is removed, but the space within the database is not reclaimed. Full-Text compression is submitted as a maintenance job to be processed by the automation service.

To compress full-text for a project:

1. In the **Projects** screen, select one or more projects.
2. Click the **Submit for Full-Text Compression** icon.
3. Select **Yes** to confirm the compression and submit the maintenance job.

Enhanced Auditing

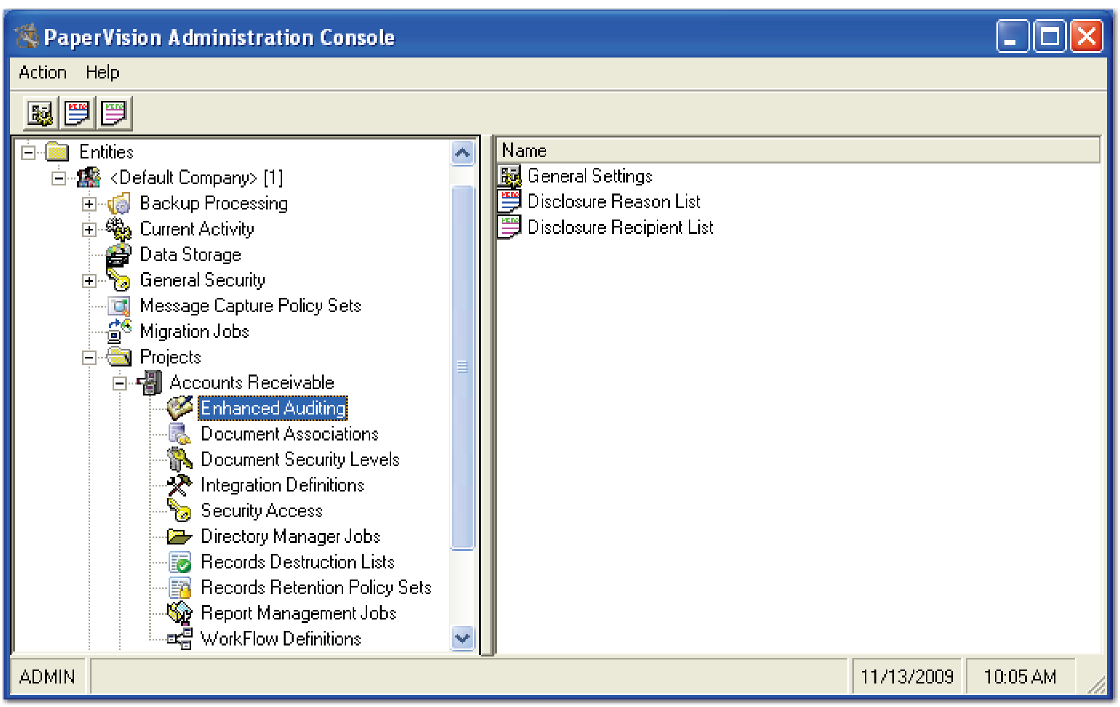
PaperVision Enterprise keeps an audit log entry for every document operation a user performs. Administrators can also opt to take advantage of PaperVision Enterprise's Enhanced Auditing capabilities on a per-project basis. Enhanced auditing is designed to help users in certain industries fulfill regulatory compliance obligations. When enabled, users will be required to enter/select the following information whenever they perform a document operation that could result in a disclosure to another party:

- **Method of disclosure**: Print, fax, email, etc.
- **Disclosure recipient**: Party who is receiving the information
- **Disclosure reason**: Reason the disclosure was made to the recipient
- **Notes**: Any additional information about the disclosure

Enabling Enhanced Auditing

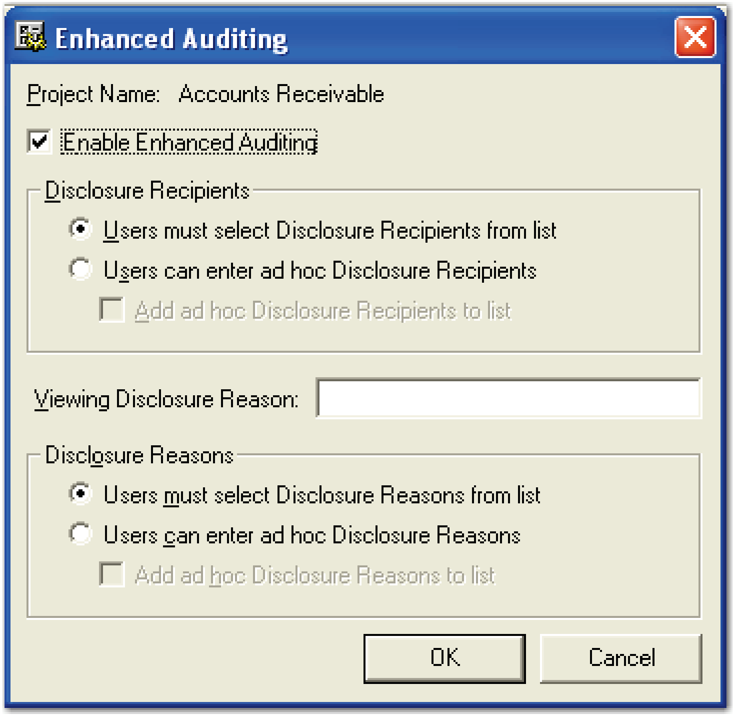
To enable enhanced auditing for a project:

1. Expand the appropriate project, and then select **Enhanced Auditing**. The **Enhanced Auditing** screen appears.



Enhanced Auditing

2. Click the **General Settings**  icon. The **Enhanced Auditing** dialog box appears.



Enhanced Auditing

3. Select **Enable Enhanced Auditing**. If applicable, select one of the following settings in the Disclosure Recipients section:
   - **Users must select Disclosure Recipients from list:** This setting specifies that users must select an existing recipient from the list when making a disclosure.
   - **Users can enter ad hoc Disclosure Recipients:** This setting specifies that users can select an existing recipient from the list or they can enter an unlisted recipient.
   - **Add ad hoc Disclosure Recipients to list:** When a user enters an ad hoc recipient, that new recipient will be added to the global list (for others to select in the future).
4. Enter the value that will be used when viewing documents in the **Viewing Disclosure Reason** field. Enhanced auditing requires that any disclosure be tracked. When a document is viewed, rather than requiring the user to specify why the document is being viewed (which can be done as a Manual Disclosure), this specified value is entered as the disclosure reason.

5. If applicable, select one of the following settings in the **Disclosure Reasons** section:
   - **Users must select Disclosure Reasons from list:** This setting specifies that users must select an existing reason from the list when making a disclosure.
   - **Users can enter ad hoc Disclosure Reasons:** This setting specifies that users can select an existing reason from the list or they can enter an unlisted reason.

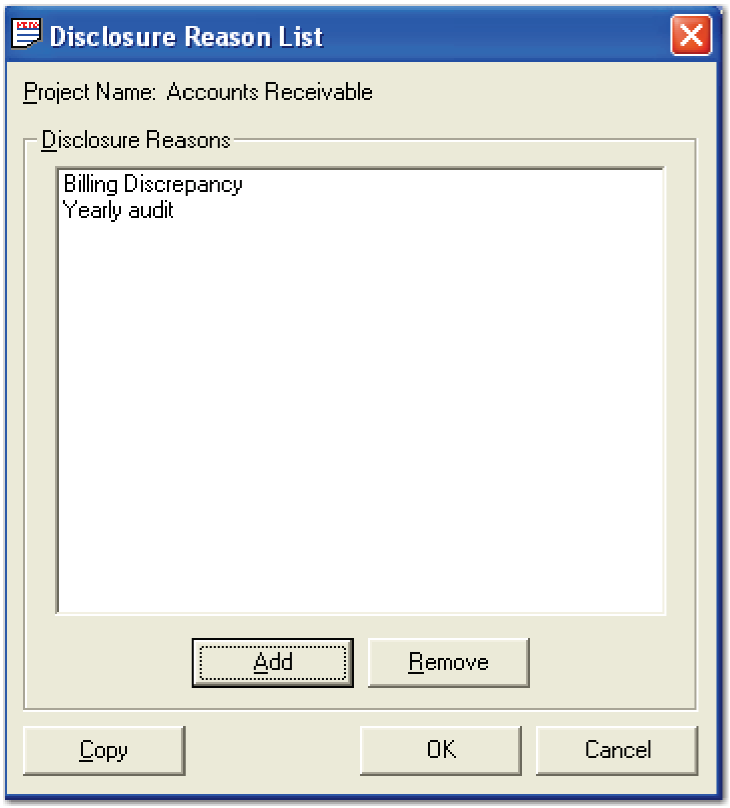
     Add ad hoc Disclosure Reason to list: When a user enters an ad hoc reason, that new reason will be added to the global list (for others to select in the future).
6. Click **OK** to save the changes.

Disclosure Reason List

Disclosure reasons can be configured by the administrator or, if allowed, can be entered by the users as they make disclosures.

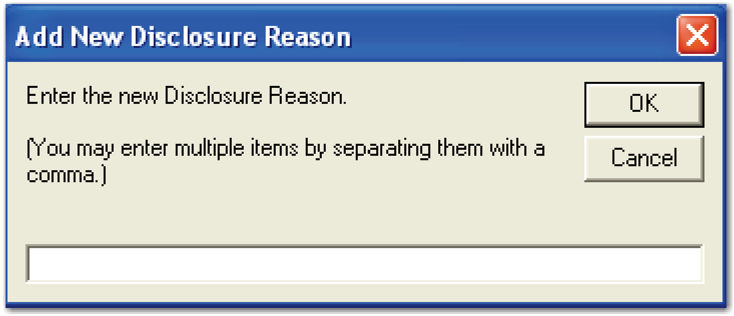
To manually add disclosure reasons:

1. In the **Enhanced Auditing** screen, click the **Disclosure Reason List** icon. The **Disclosure Reason List** dialog box appears.



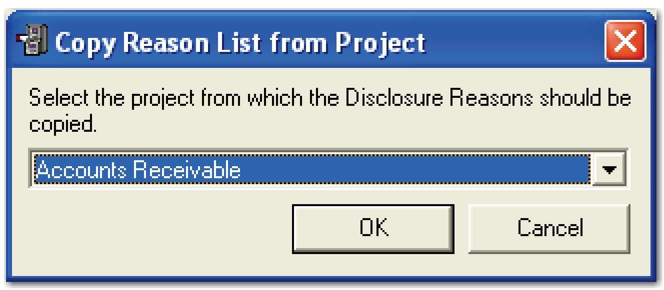
Disclosure Reason List

2. Click **Add**. The **Add New Disclosure Reason** dialog box appears.



Add New Disclosure Reason

3. Enter the new disclosure reason. You can enter multiple reasons by separating them with a comma.
4. Click **OK** to save the new reason(s).
5. Alternatively, you can copy the disclosure reasons from another project's list (so you do not have to enter them multiple times) by selecting **Copy**. The **Copy Reason List from Project** dialog box appears.



Copy Reason List from Project

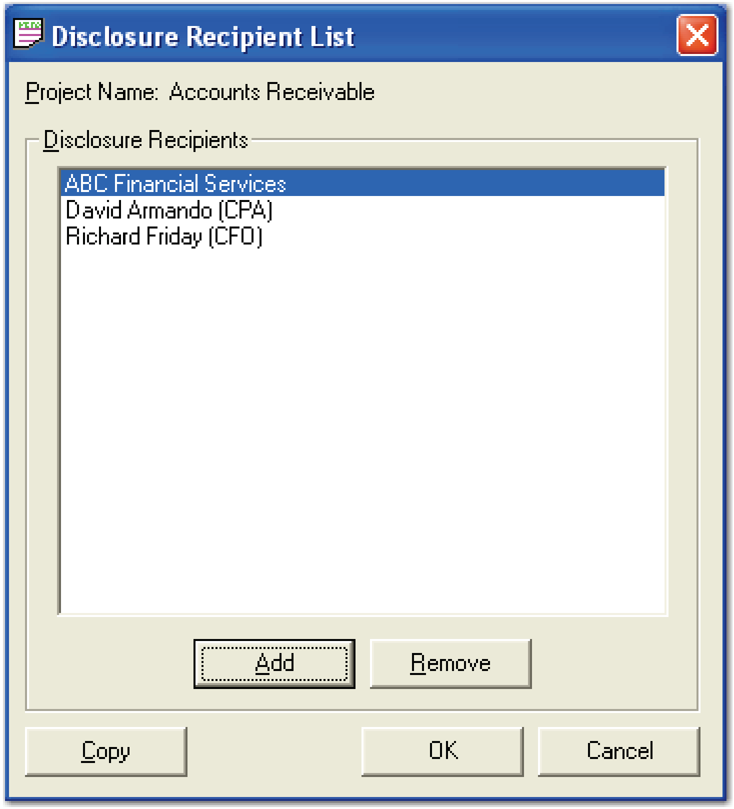
6. Select the project from which to copy the disclosure reason list, and then click **OK**. Any reasons that already exist in the list will be ignored.
7. Click **OK** to save the disclosure reason list.

Disclosure Recipient Lists

Disclosure recipients can be configured by the administrator or, if allowed, can be entered by the users as they make disclosures.

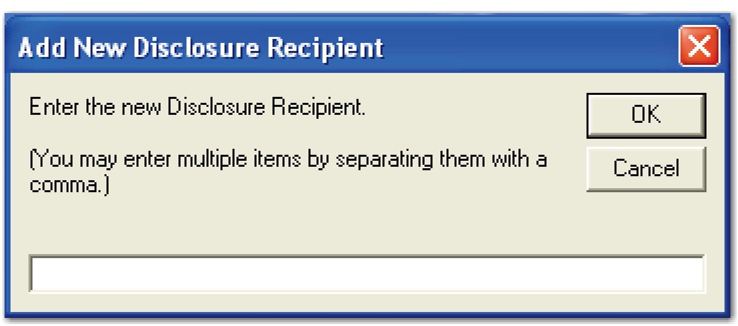
To manually add disclosure recipients:

1. In the **Enhanced Auditing** screen, click the **Disclosure Recipient List** icon. The **Disclosure Recipient List** dialog box appears.



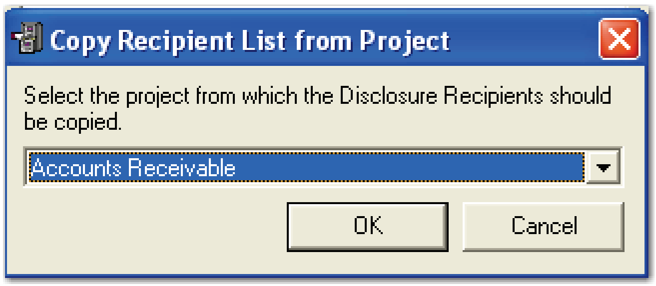
Disclosure Recipient List

2. Click **Add**. The **Add New Disclosure Recipient** dialog box appears.



Add New Disclosure Recipient

3. Enter the new disclosure recipient. You can enter multiple recipients by separating them with a comma.
4. Click **OK** to save the new recipient(s).
5. Alternatively, you can copy the disclosure recipients from another project's list (so you do not have to enter them multiple times) by selecting **Copy**. The **Copy Recipient List from Project** dialog box appears.



Copy Recipient List from Project

6. Select the project from which to copy the disclosure recipient list, and then click **OK**. Any recipients that already exist in the list will be ignored.
7. Click **OK** to save the disclosure recipient list.

Document Associations

Document Associations allow users to view documents that are linked (via common index fields or index values) across multiple projects. In the Administration Console, you can link index fields or index values in one project to a second project. When a user performs a document search in the PaperVision Enterprise Web Client and subsequently views a document in either document viewer, all associated documents (meeting the search criteria that you defined for the projects' Document Associations) can be viewed.

When you configure an index field or index value (or wildcard) for a Document Association, the following search methods are used when the user executes the Document Association operation in the PaperVision Enterprise Web Client:

- When you configure an index field, the index value in the configured field for the current document will be used to search the index field configured in the associated project (to find any documents with the same index value).
- When you configure an index value (or, a wildcard), the index value configured in the Document Association will be used to search the index field configured in the associated project (to find any documents with the same index value).

When entering date search criteria for a Document Association, the [CURRENTDATETIME] tag can be used to represent the current date and time that the search is run. This is particularly useful in situations where documents need to be identified that are of a certain age. A specified number of years (Y), months (M), days (D), hours (H), minutes (N), or seconds (S) can be added to or subtracted from the current date and time. Possible uses for the [CURRENTDATETIME] tag are as follows:

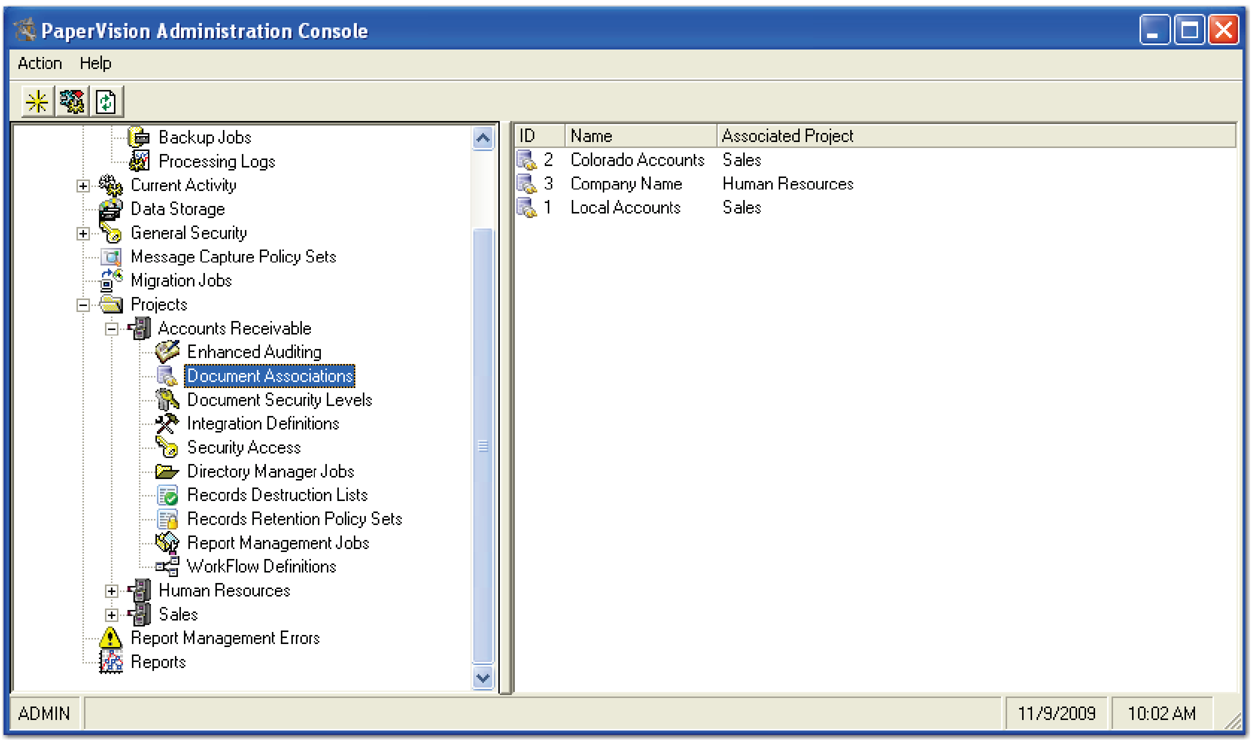
- [CURRENTDATETIME] = Current Date/Time
- [CURRENTDATETIME+1Y] = Current Date/Time plus 1 year
- [CURRENTDATETIME-12M] = Current Date/Time minus 12 months
- [CURRENTDATETIME+2D] = Current Date/Time plus 2 days
- [CURRENTDATETIME-96H] = Current Date/Time minus 96 hours
- [CURRENTDATETIME+900N] = Current Date/Time plus 900 minutes
- [CURRENTDATETIME+120S] = Current Date/Time plus 120 seconds

Creating a New Document Association

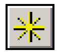
You can create a new Document Association that links one or more index fields (or specific index values) in one project to a second project. You can then create subsequent document associations for each project in your entity. Alternatively, you can assign wildcards as search criteria if you have not already selected a specific index field name or index value. For more information, see **Appendix E - Search Criteria**.

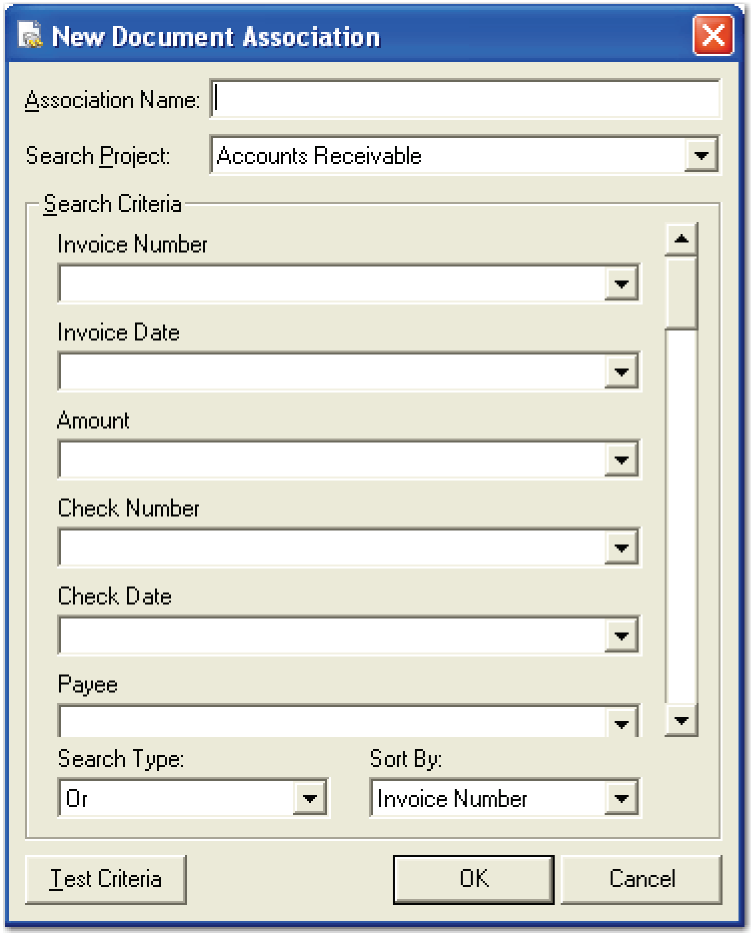
To create a new document association:

1. Expand the appropriate project, and then select **Document Associations.** The **Document Associations** screen appears.



Document Associations

2. Click the **New**  icon. The **New Document Association** dialog box appears.



New Document Association

3. Enter the **Association Name**.
4. From the **Search Project** drop-down list, select the project to be cross-searched during the user's search.
5. In the **Search Criteria** section, you can select an index field name from the drop-down list or enter a specific index value in the field.

> **Note**:
>
> You can enter wildcards as search criteria if you have not already selected an index field name or index value.

6. Select the **Search Type**, which specifies the operator (and/or) used when multiple index fields are being searched.
7. Select the **Sort By** setting, which specifies how the document associations' search results list is sorted.

8. Click the **Test Criteria** button to validate your criteria. You will be notified if any errors exist.
9. Click **OK**.

Importing a Document Association

Document associations that have been previously exported can be imported into the PaperVision Enterprise Administration Console.

To import a document association:

1. In the **Document Associations** screen, click the **Import**  icon.
2. In the **Import Document Association** dialog box, locate the directory containing the document association.
3. Select the XML file, and then click **Open**.
4. When the notification indicates the import was successful, click **OK**.

Exporting a Document Association

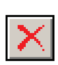
The export creates an XML document describing the association so it can be imported into another PaperVision Enterprise system.

To export a document association:

1. In the **Document Associations** screen, select the document association.
2. Click the **Export**  icon.
3. In the **Export Document Association** dialog box, locate the directory where the export will be written.
4. Enter the file name for the export.
5. Click **Save**. A message will notify you where the export was written.

Deleting Document Associations

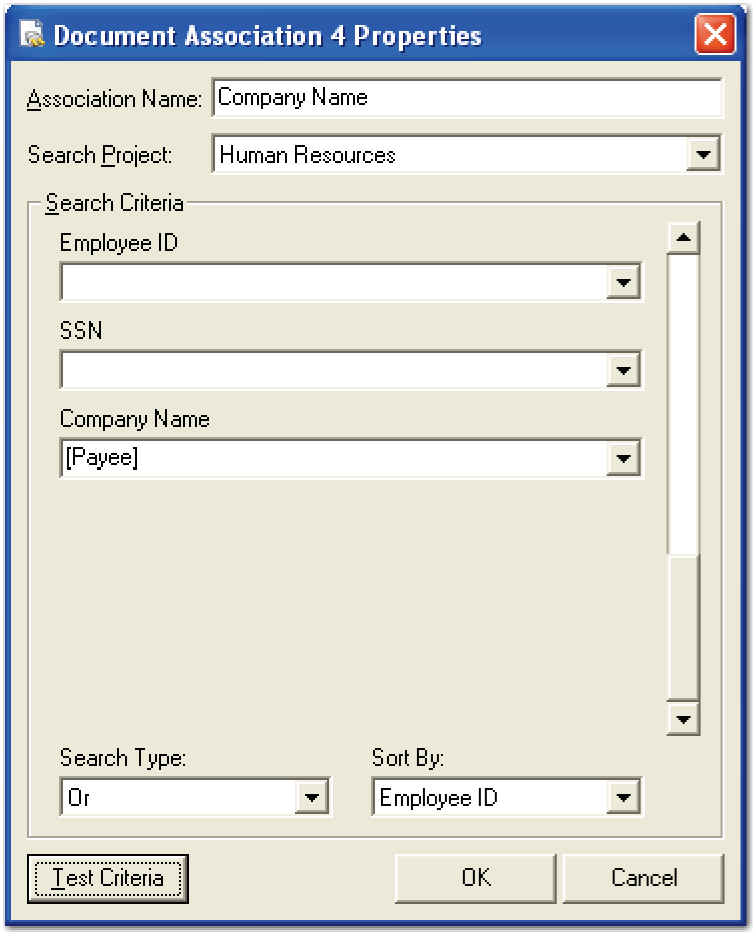
To delete document associations:

1. In the **Document Associations** screen, select one or more document associations.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Editing the Properties of a Document Association

To edit the properties of a document association:

1. In the **Document Associations** screen, click the **Properties**  icon. The **Document Association Properties** dialog box appears.



Document Association Properties

2. Make the necessary changes to the document association, and then click **OK**.

Security Access

PaperVision Enterprise offers the ability to limit access to the different functionality such as printing and emailing within a project. Additionally, administrators can limit which fields can be viewed/searched and altered.

> **Note**:
>
> Security rights are cumulative - users accumulate individual rights as well as all rights assigned to any group(s) of which they are a member.

Security Rights

The following security rights can be applied to document functions, annotations, audit reviews, records retention/destruction settings, and folders in PaperVision Enterprise.

View Documents

This setting grants the ability to view documents.

View Outside PaperVision

This setting grants the ability to view document from outside of the PaperVision Enterprise system (i.e. not using the browser plug-in). If this option is not selected for a user (other than a system administrator), and documents are accessed via the PaperVision Enterprise Web Client, the user will be forced to use the browser plug-in (regardless of the Document Access Method settings).

Export/Open Documents

This setting allows users to export documents and to open the source documents in their native applications (as determined by their operating system).

Print/Fax Documents

This setting allows users to print and fax documents.

Email Documents

This setting allows users to email documents.

WorkFlow Instantiations

This setting allows users to create new WorkFlow instances for documents.

Tag for Migration

This setting allows users to tag documents for migration.

Delete Documents

This setting allows users to delete documents.

Modify Documents

This setting allows users to alter document index values and to check documents in and out of the system (versioning).

Add Documents

This setting allows users to add documents to the system.

Create Document Grants

This setting allows users to create document grants.

View WorkFlow Status

This setting allows users to view the status of a document's WorkFlow instances.

View Annotations

This setting allows users to optionally view annotations on documents.

Force Annotations On

This setting requires that users view annotations on documents (useful for enforcing redacted portions of documents). Users are able to perform operations on documents to which they have access, but they cannot remove, hide, or move the annotations. For full-text documents with annotations forced on, full-text is hidden behind the annotation, but users can still perform a full-text search on the document. In addition, if this setting is enabled and an annotation fails to display, the document will not display, protecting the security of the annotations.

Create/Modify Annotations

This setting allows users to create and modify annotations on documents.

Audit Reviews for Individual Documents

This setting allows users to perform security audits on documents.

Apply Retention Locks

This setting allows users to set document retention lock dates for records retention.

Remove Retention Locks

This setting allows users to clear document retention locks for records retention.

Apply Destruction Dates

This setting allows users to specify document destruction dates for records retention.

Approve Destruction Lists

This setting allows users to view and approve (or deny) scheduled document destruction lists for records retention.

View Folders

This setting allows users to view all folders in the Folders tab.

Create Folders

This setting allows users to create new folders in the Folders tab.

Delete Folders

This setting allows users to delete folders in the Folders tab.

Rename Folders

This setting allows users to rename folders in the Folders tab.

Move Folders

This setting allows users to move folders in the Folders tab.

Move Docs into Folders

This setting allows users to move documents into folders in the Folders tab.

Remove Docs from Folders

This setting allows users to remove documents from folders in the Folders tab.

View Signatures

This setting allows users to view signatures that have been applied to documents.

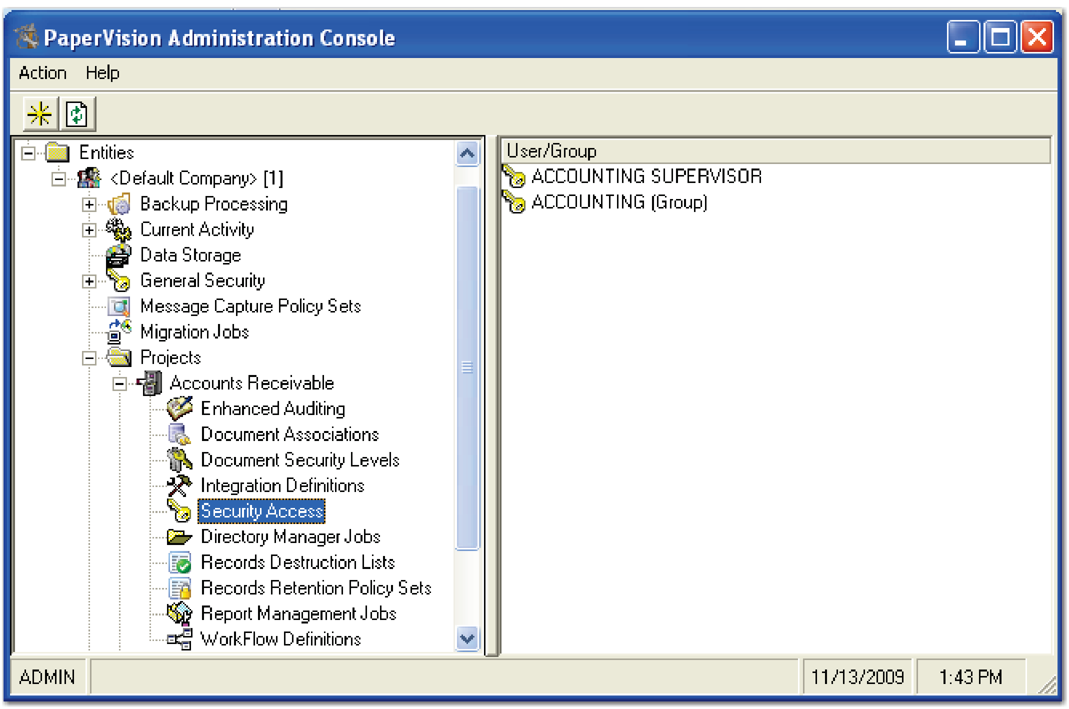
Sign Documents

This options allows users to electronically sign documents.

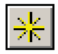
Granting Security Access Rights

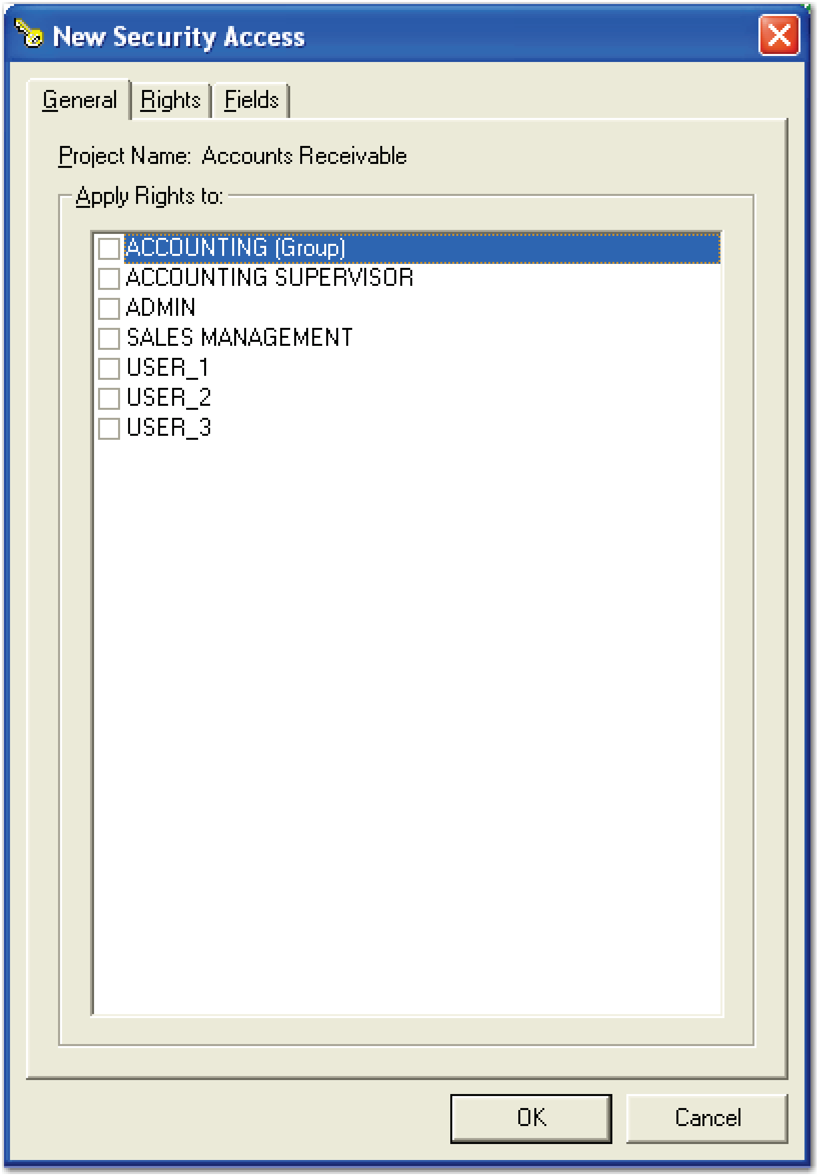
To grant security access rights to a project:

1. Expand the appropriate project, and then select **Security Access.** The **Security Access** screen appears.



Security Access

2. Click the **New**  icon. The **New Security Access - General** tab appears.

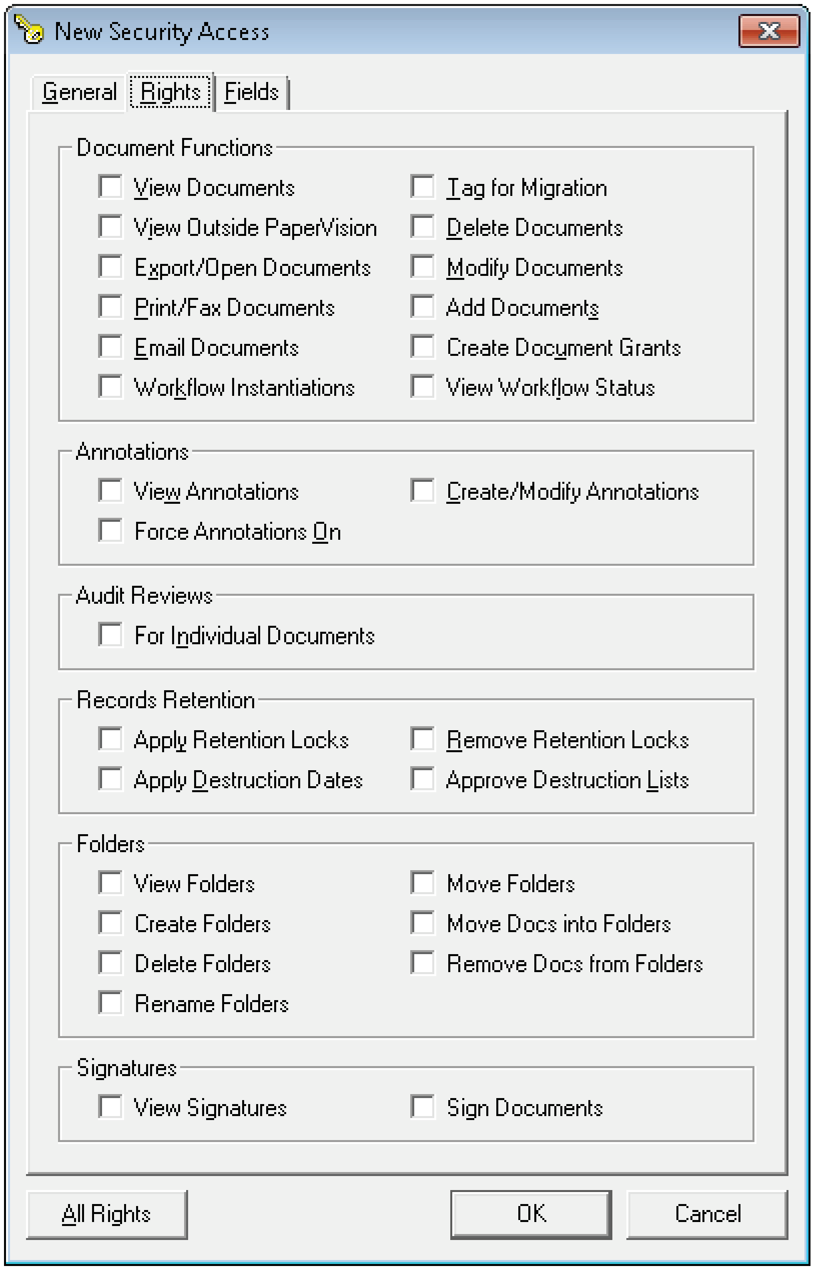


New Security Access – General

3. Select the users and groups.

> **Note**:
>
> If you select a user or group who already has rights in this project, the project rights will be replaced with the new rights you are defining.

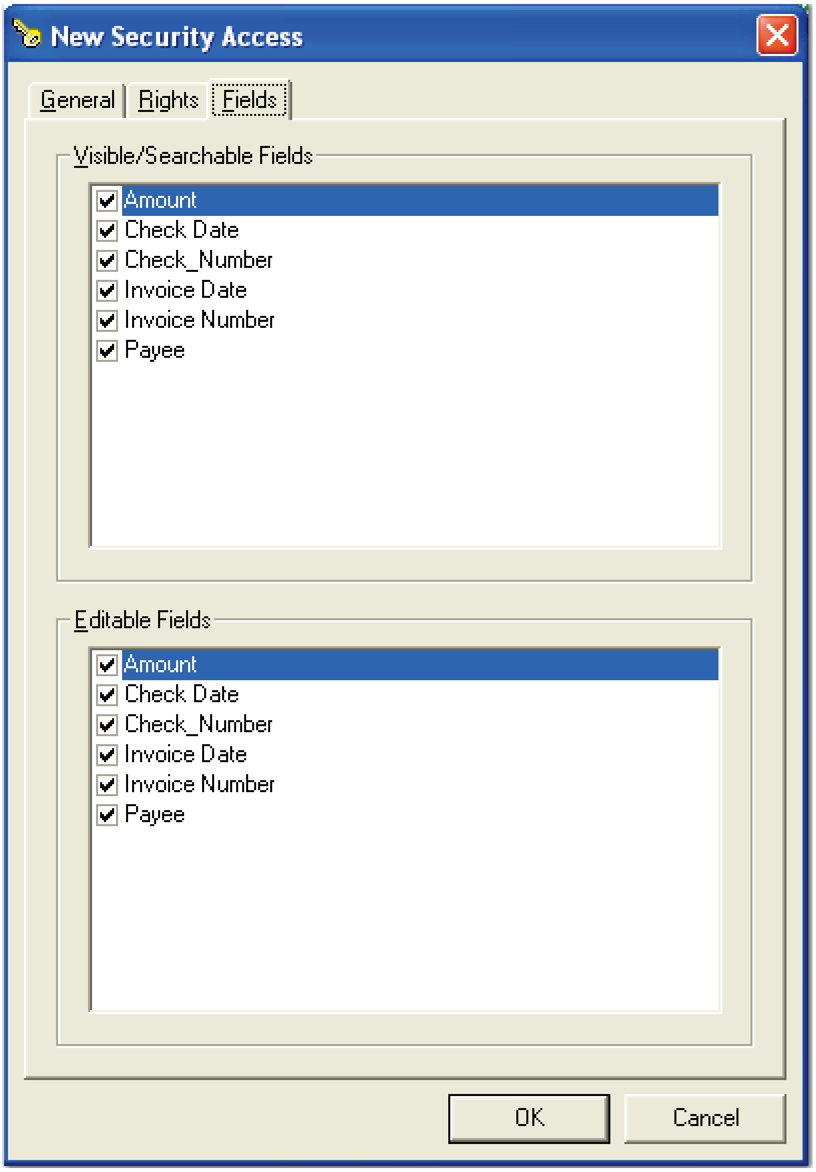
4. Select the **Rights** tab to assign rights to the selected users and groups. The **New Security Access - Rights** tab appears.



New Security Access - Rights

5. Select the rights to be granted to the selected users and groups. For descriptions of each, see the section on **security rights**.

6. Select the **Fields** tab to limit index field access for the selected users and groups. The **New Security Access - Fields** tab appears.



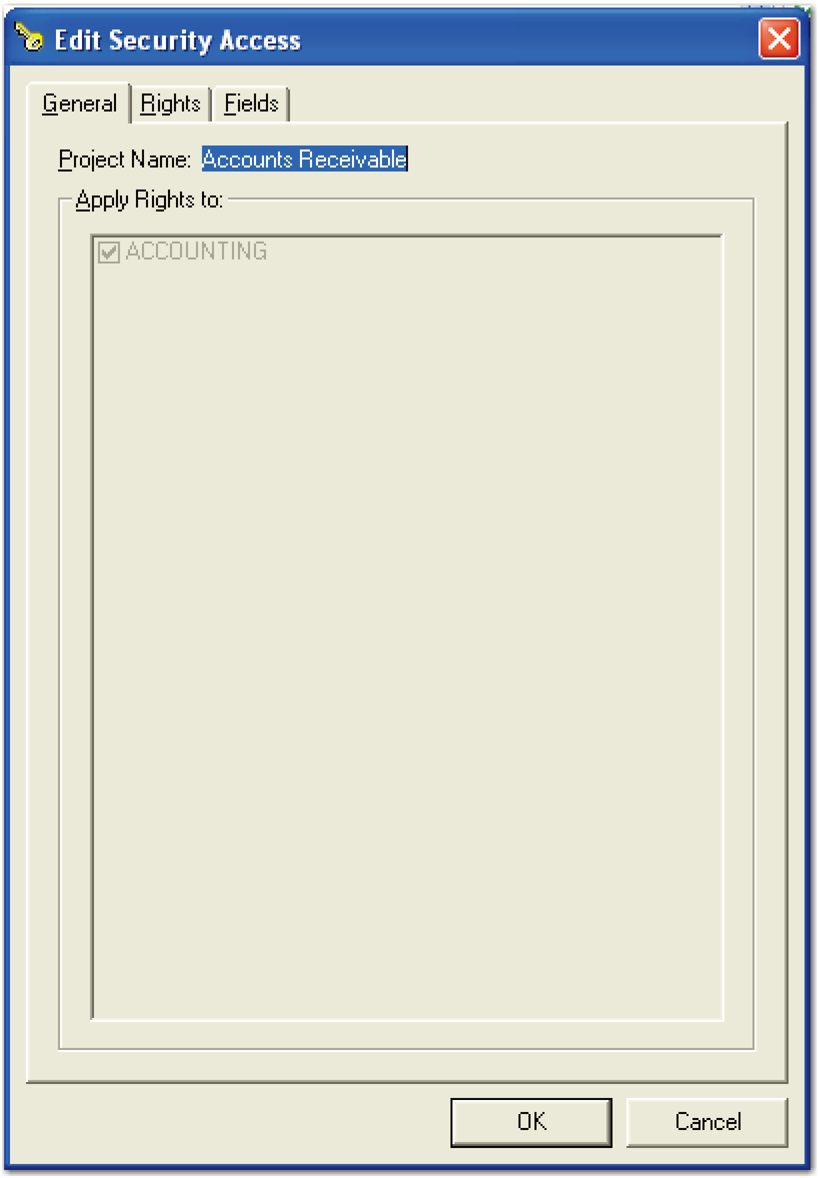
New Security Access – Fields

7. Remove check marks from the fields that users should not have access to view or search.
8. If the users have rights to modify documents, remove check marks from the fields that the user should not have rights to modify
9. Click **OK** to save the new security access. Any new users or groups who have access to the project will be listed in the **Security Access** screen.

Editing Existing Security Access Rights

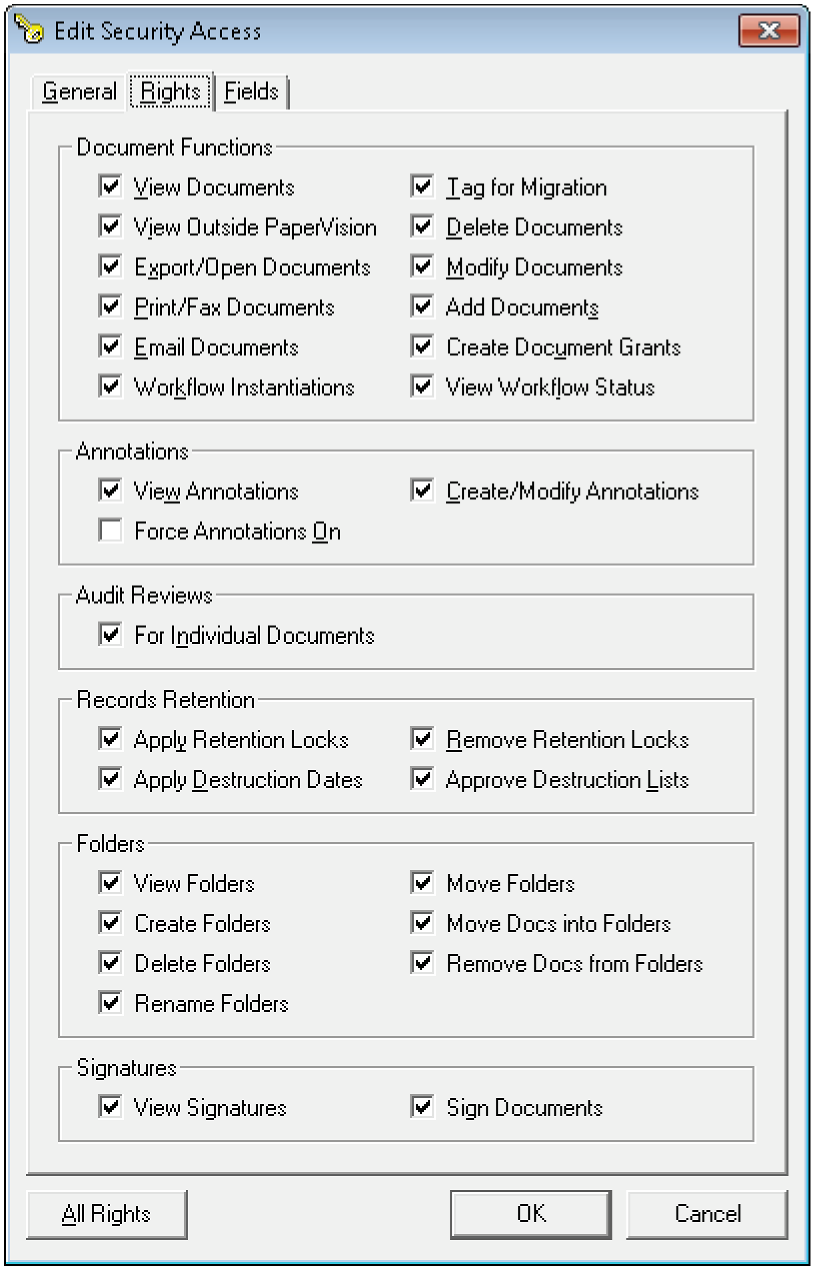
To edit existing security access rights:

1. In the **Security Access** screen, select the appropriate user or group.
2. Click the **Properties**  icon. The **Edit Security Access – General** tab appears.



Edit Security Access – General

3. Select the **Rights** tab. The **Edit Security Access - Rights** tab appears.



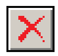
Edit Security Access – Rights

4. Grant/revoke the rights as necessary.
5. Select **OK** to save the changes.

Deleting Security Access Rights

Security access rights can be deleted in two ways. First, you can edit the security access rights for a user or group and then remove all rights. The second, more efficient manner is to delete the user or group possessing the security access rights.

To delete security access rights:

1. In the **Security Access** screen, select the appropriate user or group.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Document Security Levels

PaperVision Enterprise provides extensive security measures beyond the project-level security access rights described earlier in this chapter. Project security access rights provide functionality-based security at the project level. Users are granted (or denied) access to specific projects and functionality within those projects. Document security, on the other hand, provides much more fine-grained tuning of the security all the way down to the individual document level.

Document security is performed in two steps. First, security levels are defined. Second, those security levels are applied to documents. When one or more security levels are applied to a document, that document is no longer accessible to all users with security access to the project. Instead, the users must also have access to at least one of the document security levels assigned to the document. A document can have an unlimited number of document security levels assigned to it.

Applying document security levels can be accomplished in one of three manners:

- As documents are imported (or added), if any **Automatic Selection Criteria** has been defined, PaperVision Enterprise will automatically apply the document security levels whose criteria matches the document’s index values.
- Document security levels can be applied in bulk to all of the existing documents. Any document that meets a level’s **Automatic Selection Criteria** will have the level assigned to it.
- Document security levels can be applied manually. Administrators can search for documents in the PaperVision Enterprise Web Client, select specific documents, and then apply or remove specific security levels.

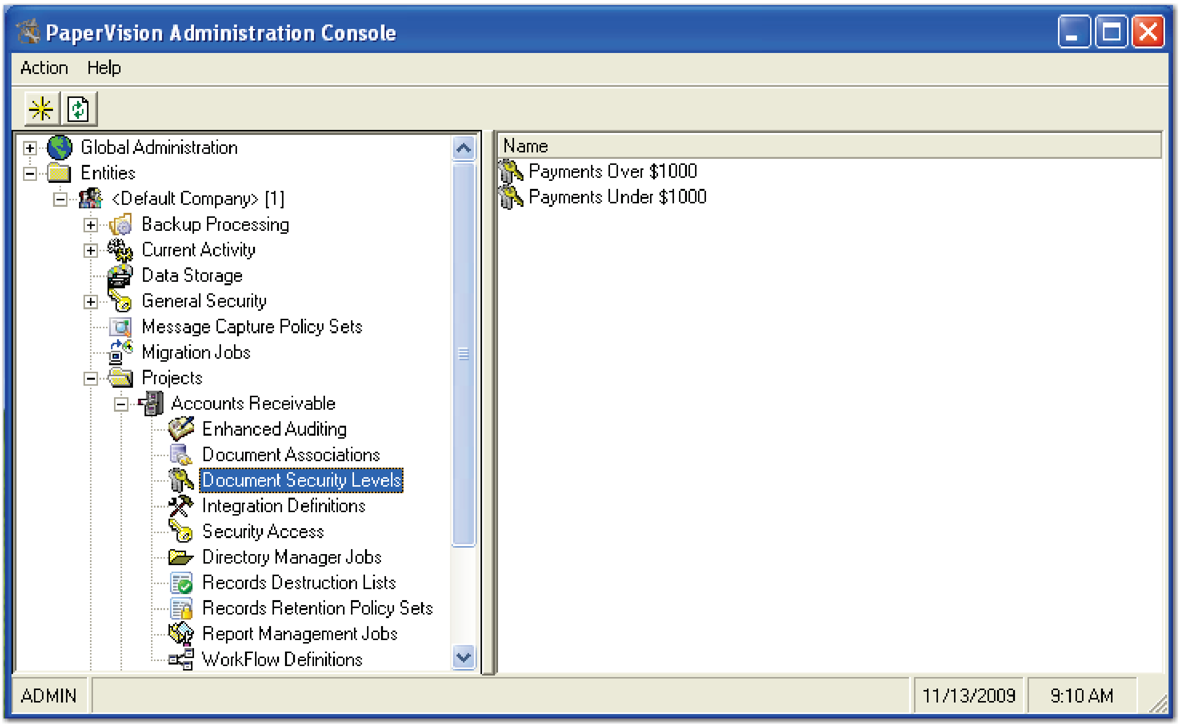
Administrators can easily detect documents that have been assigned document security levels since they are listed with a lock icon displayed next to the document in a search results list.

Document security levels can limit user access to only specific documents. In order to accomplish this, the administrator needs to create a generic "global" document security level which locks down all of the documents. Then, an administrator can create individual document security levels and grant users access to those levels they are required to access.

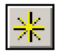
Creating a New Document Security Level

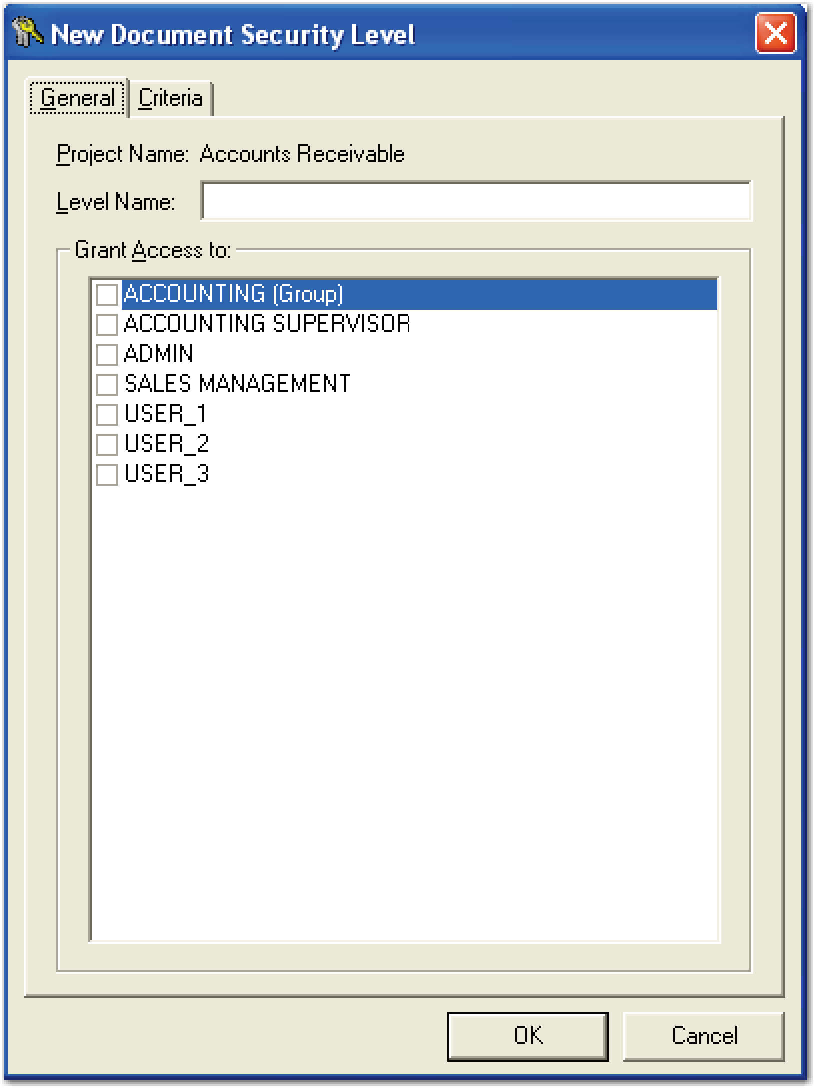
To create a new document security level:

1. Expand the appropriate project, and select **Document Security Levels**. The **Document Security Levels** screen appears.



Document Security Levels

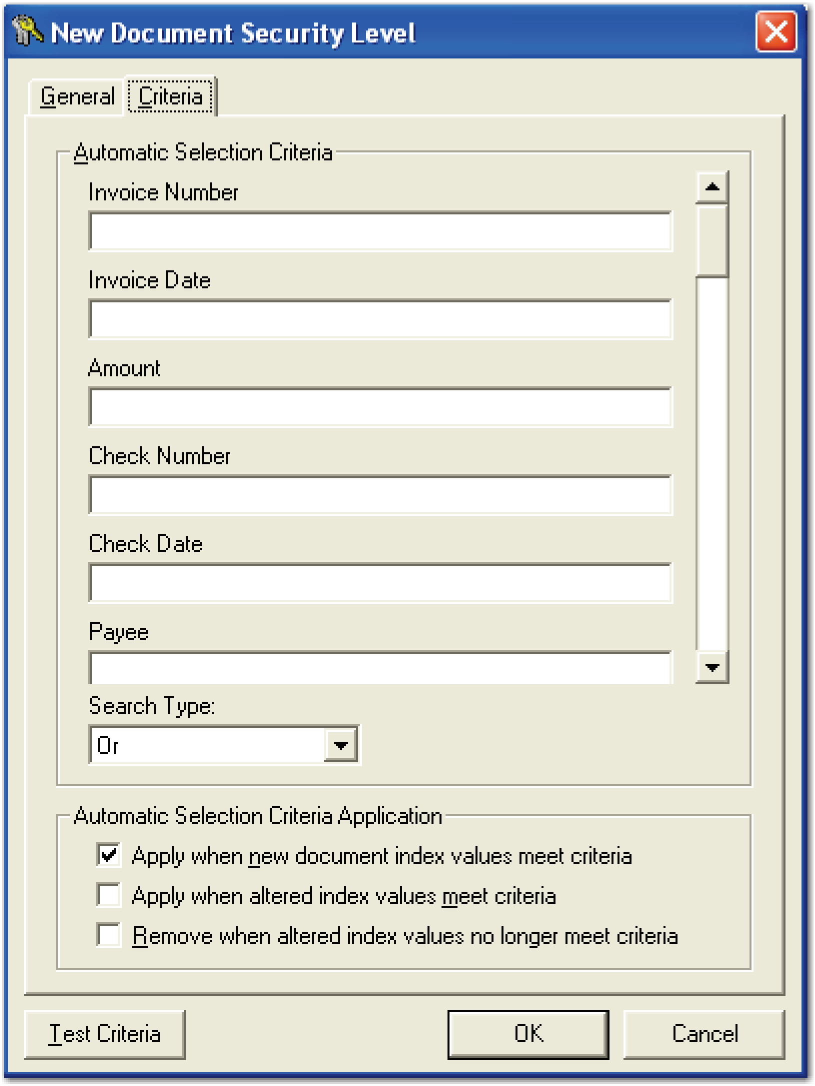
2. Click the **New**  icon. The **New Document Security Level – General** dialog box appears.



New Document Security Level – General

3. Enter the name of the new document security level.
4. Select the users and groups who will have access to any document with this security level.

5. To define specific criteria (optional), select the **Criteria** tab. The **New Document Security Level - Criteria** dialog box appears. When documents are imported or added to the system, PaperVision Enterprise automatically compares new documents' index values to all of the defined criteria for all of the document security levels within that project. Any security levels whose criteria matches the documents' index values will automatically be applied to the documents.



New Document Security Level - Criteria

6. In the **Automatic Selection Criteria** section, enter the criteria that will be automatically applied to this document security level to documents as they are imported or added to the system (or when the level is applied to existing documents). For more information about defining this criteria, refer to **Appendix E – Search Criteria**.

7. In the **Automatic Selection Criteria Application** section, you can specify when the selection criteria are evaluated automatically. Selection criteria can be applied when manual changes are made to index fields or when index fields are forcibly changed (i.e., automated via WorkFlow). Select one or more of the following options:
    - **Apply when new document index values meet criteria**: As documents are added to the project and if any **Automatic Selection Criteria** has been defined, PaperVision Enterprise will automatically apply the document security levels whose criteria matches the document's index values.
    - **Apply when altered index values meet criteria**: As index field values are changed and if any **Automatic Selection Criteria** has been defined, PaperVision Enterprise will automatically apply the document security levels whose criteria matches the document's index values.
    - **Remove when altered index values no longer meet criteria**: As index field values are changed such that the updated value no longer meets the **Automatic Selection Criteria**, the document security level is automatically removed.
8. Click the **Test Criteria** button to validate your criteria. You will be notified if any errors exist.
9. Click **OK** to save the new security level.

> **Note**:
>
> Although the new document security level is saved, it is not yet applied to documents.

Applying a Document Security Level

You can apply document security levels to documents in three ways:

- Applying the levels to documents as they are imported or added based on the levels' criteria
- Manually applying the levels to specific documents from the search results list in the PaperVision Enterprise Web Client application
- Applying the levels to all existing documents in the project that meet the levels' criteria

To apply a security level to all existing documents in a project that meet the level's criteria:

1. In the **Document Security Levels** screen, select the appropriate security level.
2. Click the **Apply**  icon. You will be notified how many additional documents to which the document security level was applied.

Submitting a Document Security Level to be Applied as a Maintenance Queue Entry

You can submit a document security level to be applied as a maintenance queue entry. Once the automation service processes maintenance jobs, the selected security levels are then applied to existing documents.

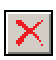
To submit a security level to be applied as a maintenance queue entry:

1. In the **Document Security Levels** screen, select one or more document security levels.
2. Click the **Submit to be Applied**  icon.
3. Click **Yes** to confirm the submittal. You will be notified that the maintenance queue entries have been created and how many document security levels were applied.

Deleting Document Security Levels

Deleting document security levels will delete the level (so it cannot be applied to any additional documents) and will remove the level from all documents it is already applied to.

To delete a document security level:

1. In the **Document Security Levels** screen, select one or more document security levels.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Editing an Existing Document Security Level

To edit an existing document security level:

1. In the **Document Security Levels** screen, select the appropriate document security level.
2. Click the **Properties**  icon.
3. In the **Edit Document Security Level** dialog box, make the necessary modifications to the document security level.
4. Click **OK** to save the changes.

Directory Manager Jobs

Directory Manager jobs automate the batch import process of documents from any source media. Imported documents can be automatically indexed by specific directory names the files reside in, the name of the file, a delimited segment of the name of the file, or the file modification date. This functionality not only provides a manner of pulling in an organization's ad-hoc document management system (using directories and file names) or importing documents scanned by a third-party application, but also allows deep integration with fax server software and network attached scanners and photocopiers.

The process of running the directory manager job is handled as an automated process by the PaperVision Enterprise Automation Service. As the automation service runs the job, it compares the modification date of the files to the job's defined minimum modification date. Only files that fall on or after the minimum modification date (if enabled) will be imported. After the import is complete, the minimum modification date that is stored for the job is automatically updated with the most recent modification date of any of the files imported. As files are imported, they can be imported into a new data group (copied from their source location) or simply referenced at their source location.

Directory manager jobs can also import the full-text contents of image files. If a file with the same name, but a ".PVFULLTEXT" extension (e.g., "document.TIF" and "document.PVFULLTEXT") exists in the same directory as the imported file, it will automatically be used to populate the full-text data for that document. If the imported document contains multiple pages, the PVFULLTEXT file should use the Form Feed character (ASCII character 12) to separate pages within the document.

Global administrators can require that a "marker" file called 'dirmgr.submit' be required in the job's path before the system will import any of the files by setting this option in the **Global System Settings – Data** screen.

Directory manager jobs can also process PaperVision Enterprise Package Files which are compressed and optionally encrypted files that contain all of the files (in the appropriate directory structure) for the directory manager job and include a file extension of PVPKG. Package files are particularly useful when you wish to transport files to be processed by directory manager, but need to provide added security (through encryption) or increase file transfer speeds (by transferring one large file rather than hundreds or thousands of small files). Package files use compression that is 100% compatible with the existing PKZip 2.04g format and optional WinZip 9.0 AES encryption. As such, package files can be created using most popular Zip compression tools. However, the PaperVision Enterprise Data Transfer Manager can be used to completely automate the creation and transport of package files.

In order to be processed by a directory manager job, package files must include an additional unencrypted file embedded in the root of the package file (known as the package information file):

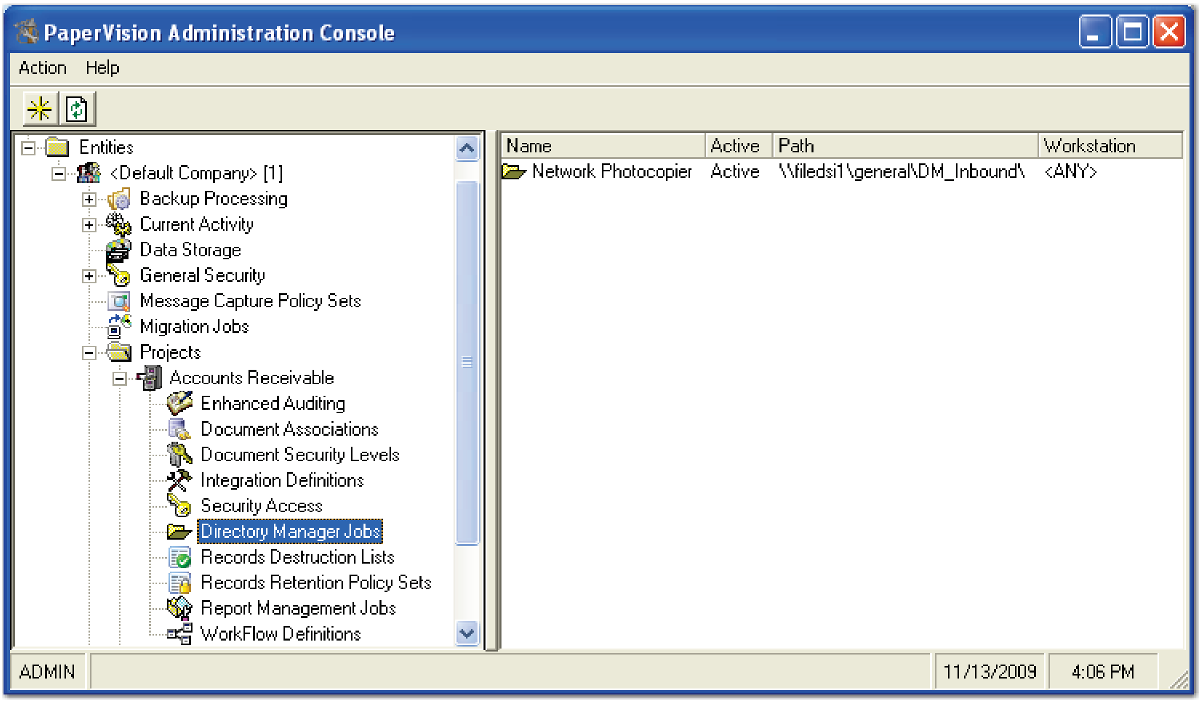
```
File Name: “<PackageFileName>.pvpkginfo”

File Contents:
<?xml version="1.0"?>
<PVPACKAGEINFO>
    <ENTID>EntityIDHere</ENTID>
    <ENCRYPTKEYNAME>KeyNameHere</ENCRYPTKEYNAME>
</PVPACKAGEINFO>
```

As directory manager processes a package file, it first extracts the package information file. It uses the ENTID and ENCRYPTKEYNAME values to determine if the package contents are encrypted. If the ENCRYPTKEYNAME value is not empty, then it will retrieve the encryption key value for the encryption key name for the entity ID specified and use that value to decrypt the remaining contents of the package. Then, PaperVision Enterprise extracts the contents of the package file to the path specified in the Global System Settings' **Local Package Workspace Path**. Once the contents of the package file are fully extracted, directory manager processes the extracted contents of the package file into a new data group (regardless of the job's Copy Files to a new data group setting) because they reside at a temporary location. Furthermore, processing of the contents of a package file also ignores the job's Minimum Modified Date setting because file dates can be modified by the package creation or package extraction process. Once the contents are processed, it removes the contents from the Local Package Workspace Path and always removes the package file from its original location (regardless of job's **Delete original files after successful import** setting).

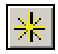
Creating a New Directory Manager Job

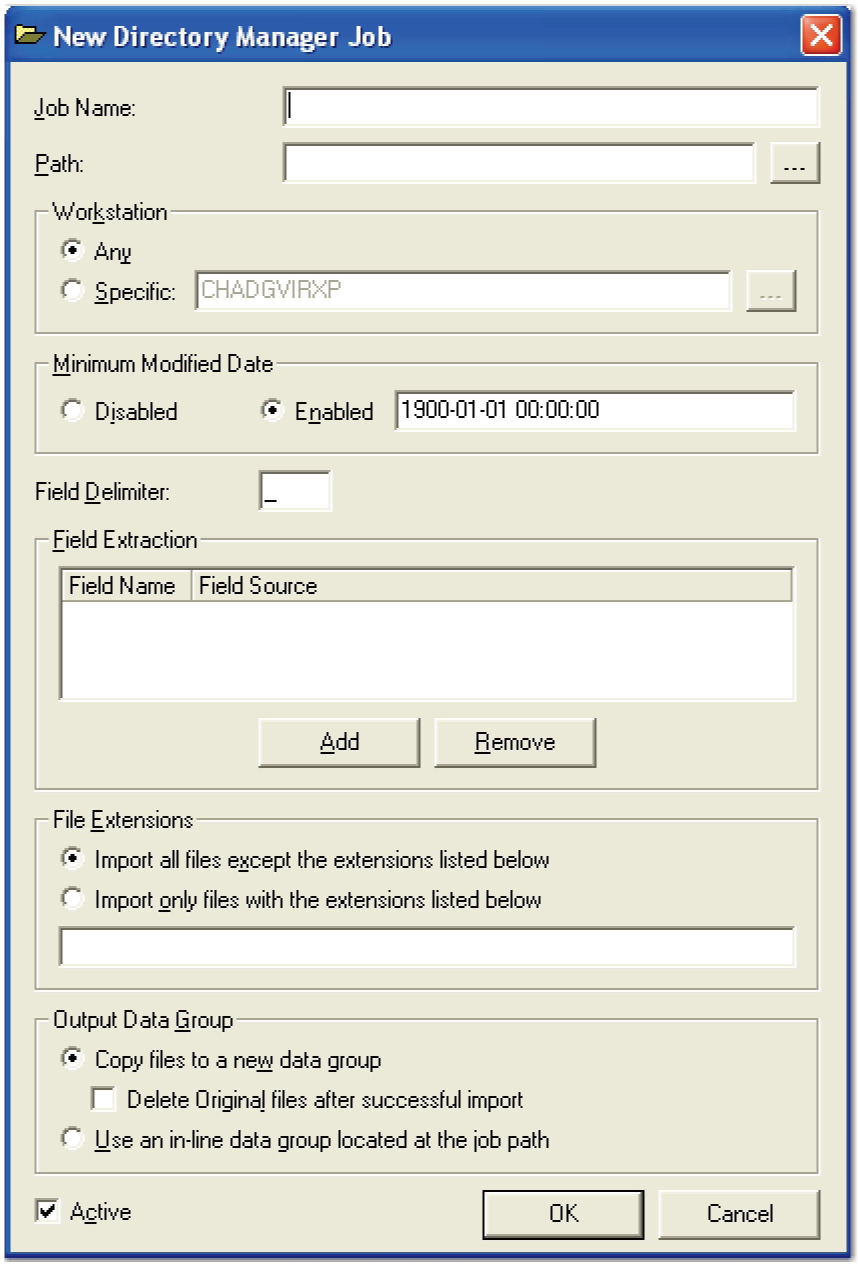
To create a new directory manager job:

1. Expand the appropriate project, and then select **Directory Manager Jobs**. The **Directory Manager Jobs** screen appears.



Directory Manager Jobs

2. Click the **New**  icon. The **New Directory Manager Job** dialog box appears.



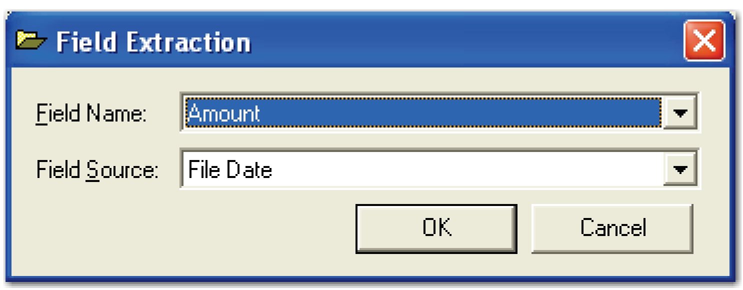
New Directory Manager Job

3. Enter the **Name** for the new job.

4. Select the **Path** that will be monitored for incoming documents.

> **Note**:
>
> Do not set up jobs that could potentially import the same document more than once (i.e. having multiple workstations monitor the same paths for the same file extensions).

5. Select the **Workstation** that will perform the import of the documents. Select **Any** to allow any automation server to perform the import of the documents. If you want to assign a specific automation server or workstation, proceed to the next step.
6. Select **Specific** to either manually enter the workstation or browse to select the workstation that will import documents. You can enter or select a specific server name (i.e. Server1) or workstation instance in the ServerName_Instance format (i.e. assigning Server1_13 would allow documents to be imported by instance #13 on Server1).
7. Enter a **Minimum Modified Date** and time. Any documents that have a modified date value greater than or equal to this value will be considered for import. Selecting the **Disabled** option will disable the date checking during import so that file date is not considered.
8. If you will be extracting index values from a delimited portion of the file name (i.e. you might extract the SSN from segment 2 of a file named "Bob Smith_777-777-7777_Oct 19, 2000.TIF"), specify the **Field Delimiter** that will be used to break the file name into segments.
9. Click the **Add** button to create a new **Field Extraction**. The **Field Extraction** dialog box appears.



Field Extraction

10. Select the **Field Name** to extract.

11. Select the **Field Source** that specifies where the document index field will obtain its value.

    For example, given the following file name and path (with the Job Path being "F:\Test\Import\" and the Field Delimiter being an underscore):

    F:\Test\Import\Acme Corp.\A132\Bob Smith_777-77-7777.TIF

    File Date: Date the file was last modified
    File Name with Extension: Bob Smith_777-77-7777.TIF
    File Name without Extension: Bob Smith_777-77-7777
    Entire File Path: F:\Acme Corp.\A132\Bob Smith_777-77-7777.TIF
    Directory Level 0: F:\Test\Import\
    Directory Level 1: Acme Corp.
    Directory Level 2: A132
    Directory Level 3 through 64: [Blank]
    File Name Segment 1: Bob Smith
    File Name Segment 2: 777-77-7777
    File Name Segment 3 through 64: [Blank]

12. Click **OK** to add the field extraction.
13. Repeat steps 9 through 11 for any additional Field Extractions.
14. If most of the file extensions for the files that exist in the Job Path will be imported, select **Import all files except the extensions listed below**. Then, specify any file extensions (separated by a comma or a space) that should not be imported.
15. Otherwise, if most of the file extensions for the files will not be imported, select **Import only files with the extensions listed below**. Then, specify only the file extensions that should be imported.
16. As the directory manager job is processed, the files can either be copied to a new attachment data group (by selecting **Copy files to a new data group**) or they can be referenced from their current location (by selecting **Use an in-line data group located at the job path**). If you are copying files to a new data group, you can also specify whether or not you want to **Delete Original files after successful import**.
17. If you wish to temporarily disable the job, remove the **Active** check mark.
18. Select **OK** to create the new directory manager job.

Deleting Directory Manager Jobs

Deleting directory manager jobs will remove the job, but will not remove any documents that were imported through the job.

To delete a directory manager job:

1. In the **Directory Manager Jobs** screen, select one or more jobs.
2. Click **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Editing an Existing Directory Manager Job

To edit an existing directory manager job:

1. In the **Directory Manager Jobs** screen, select the appropriate directory manager job.
2. Click the **Properties**  icon.
3. In the **Directory Manager Job Properties** dialog box, make the necessary modifications to the directory manager job. For descriptions of each setting, see the section on **Directory Manager Jobs**.
4. Click **OK** to save the changes.

Chapter 6 – Records Retention

The features of Records Retention allow records managers to design policies that schedule automated document retention or destruction. Retention policies set a lock date/time specifying a time before which documents cannot be deleted. Destruction policies set a destruction date/time specifying a time after which documents will be deleted (if not still locked). Destruction policies can also require document reviews prior to scheduling destruction. Document reviews can trigger an email which can optionally include a link to take the recipient directly to the list of documents to be reviewed.

In order for automated records retention processing to occur, the Records Retention operation must be scheduled in the Automation Service Scheduling. When the automated records retention operation runs, each project is evaluated. If an active policy set exists for a project, each policy in the set is processed in order. For retention policies, only documents that have not been locked are evaluated against the specified criteria. For destruction policies, only documents that are not marked for destruction and are not marked to be reviewed for destruction are evaluated against the specified criteria. After the policy set is evaluated, document destruction (deletion) is performed for any documents whose destruction date/time is less than the current date/time.

> **Important**!
>
> Regardless of the destruction date/time, if a policy does not exist for a project, then destruction will not occur.

Records Retention Policy Sets

A policy set determines which documents should be retained or destroyed and when destruction notifications should occur. Only one policy set can be active at a time. Each time a policy set is saved, the newly-saved policy set is activated, and any existing policy sets are superseded. As a result, a fully auditable list of policy sets is maintained. Each destruction or retention schedule references the policy set name and policy name that was used to mark the document for destruction or retention.

A policy set consists of one or more policies. Each policy is evaluated in the order in which it is displayed. When policy sets are saved, the data that can be "cleared" can be specified, which allows policy sets to begin evaluating documents as if no destruction and/or lock date/time has been specified:

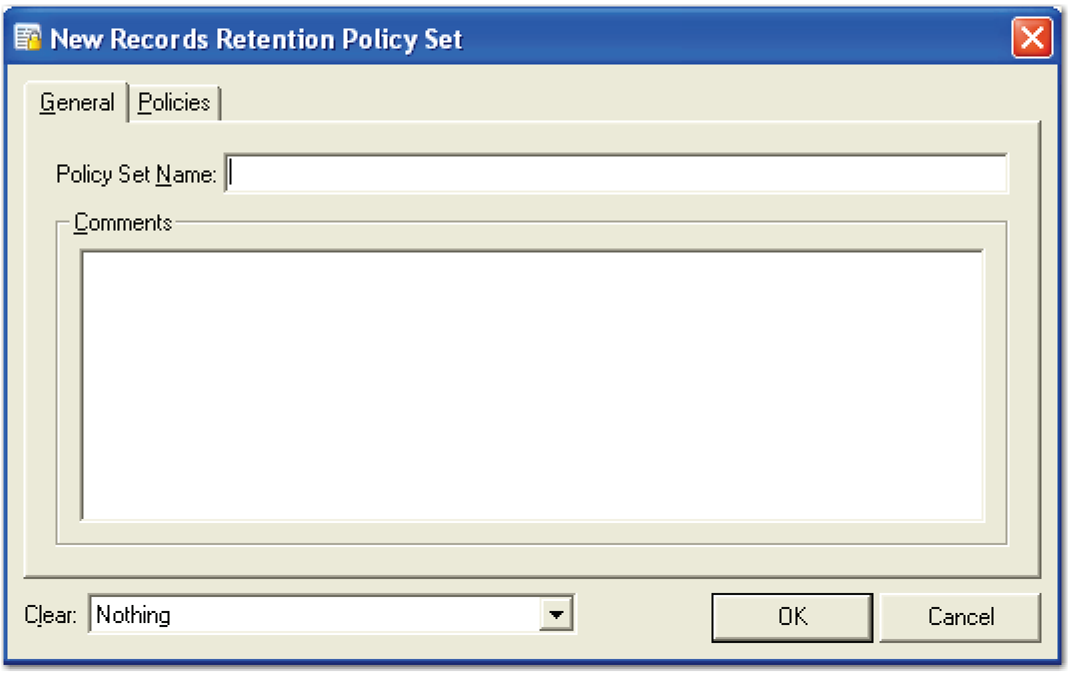
- **Nothing** specifies that no destruction or retention information should be cleared.
- **Destruction Information** specifies that all destruction dates, destruction information, and destruction lists for all documents in this project will be cleared (no destruction scheduled for any documents).
- **Lock Information** specifies that all lock dates and lock information for all documents in this project will be cleared (no locks maintained for any documents).

- **Destruction and Lock Information** specifies that all destruction dates, destruction information, destruction lists, lock dates, and lock information for all documents in this project will be cleared (no destruction scheduled or locks maintained for any documents).

A Maintenance Queue item is created when policy sets are saved, causing the project's most recent policy set to be processed. When the Records Retention Automated operation is not scheduled to run often (i.e., once a day), policy changes will be processed quickly (as long as the Maintenance Queue operation has been scheduled).

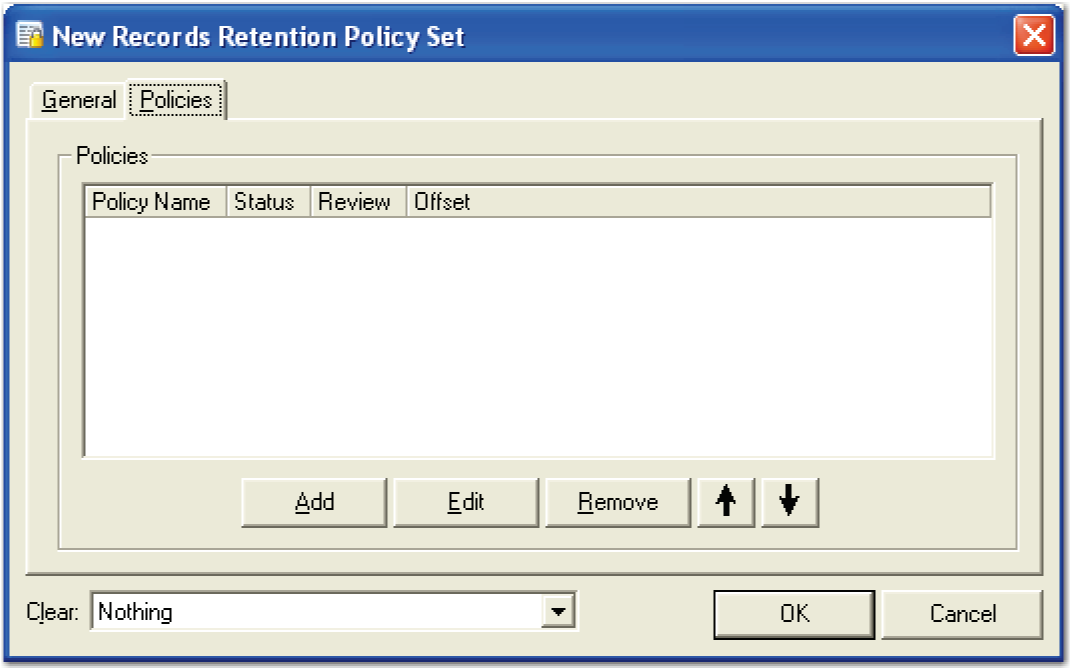
Records Retention Policy Set Properties

In the General tab, you can assign the unique name of the policy set. You can also enter additional descriptive information pertaining to the new policy set.



Records Retention Policy Set – General

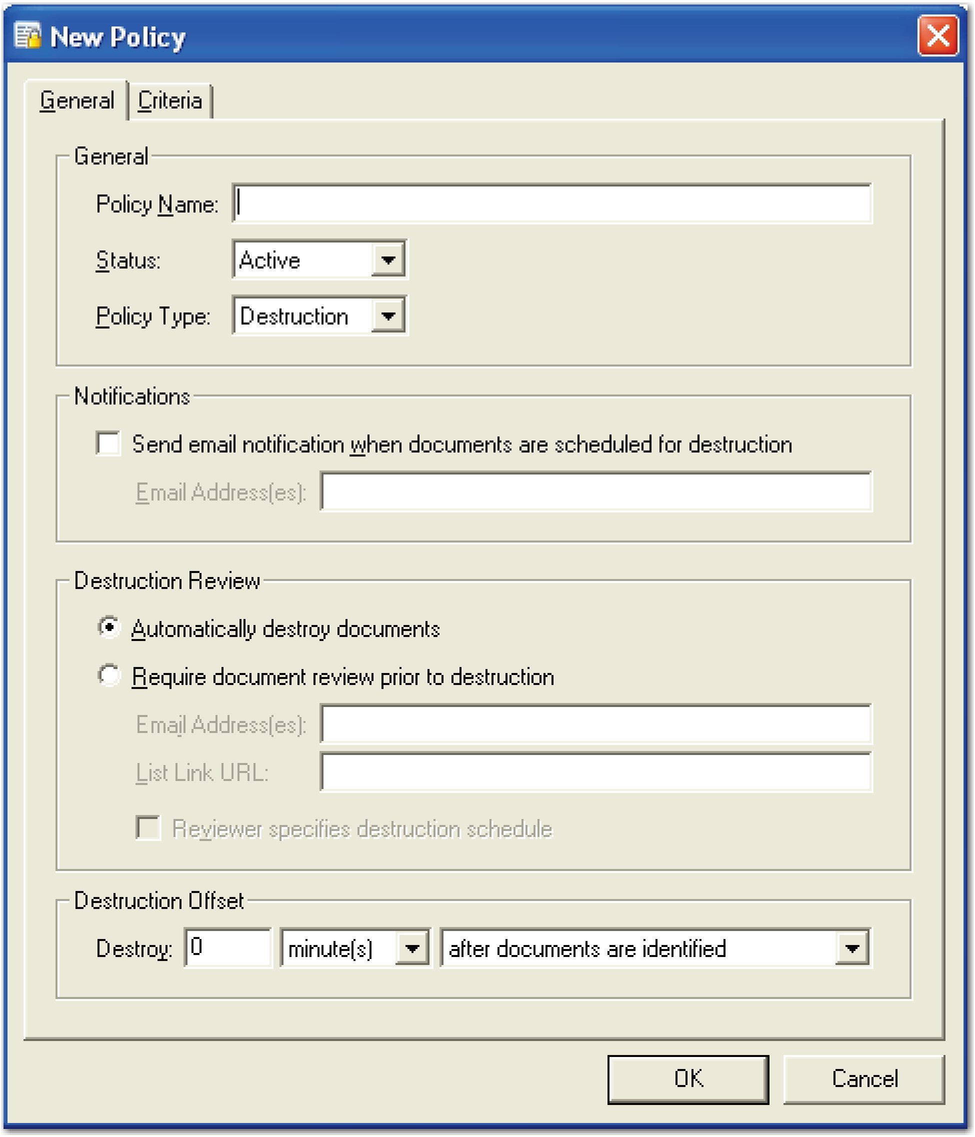
In the Policies tab, you can add a new policy set (to the bottom of the list), edit or remove existing policy sets, and move the selected policy set up or down the evaluation list.



Records Retention Policy Set – Policies

Records Retention Policies

Each policy set must contain one or more policies. Each document is evaluated against each policy in the order that the policies are displayed. If a document meets a policy's criteria and is locked or marked for destruction, then the document will no longer be evaluated against any further policies of that same type (retention or destruction).



Records Retention Policy – General

General Settings

General settings for Records Retention Policies include general classification settings, notifications, destruction review, and destruction offset properties.

Policy Name

This setting specifies the name of the policy within the policy set.

Status

This setting specifies whether or not this policy is active. Inactive policies are not evaluated.

Policy Type

This setting specifies whether documents will be evaluated for destruction (deleted) or retention (locked)

Send email notification when documents are scheduled for destruction

This setting specifies that an email should be sent to the designated **Email Address(es)**, indicating that documents have been scheduled for destruction. Multiple email addresses can be specified by separating them with commas. This email is sent at the time that the documents' destruction date/time is set, either by the automated policy processing or by the document review process.

Automatically destroy documents

This setting specifies that documents will have their destruction date/time set without any review process.

Require document review prior to destruction

This setting specifies that documents will have to be authorized for destruction. This is accomplished by the creation of a destruction list which allows authorized users to authorize or deny the setting of the destruction date/time. Destruction lists are accessible through both the administration and web user interfaces. Only authorized users (based on project security rights) can perform the destruction authorization process in the web user interface.

Require document review prior to destruction – Email Address(es)

This setting specifies that an email will be sent to the specified addresses notifying the recipients of a new group of documents that need to be reviewed for destruction.

Require document review prior to destruction – List Link URL

When an email is sent notifying the recipients of a new group of documents that need to be reviewed, a URL can be included with a link to the review list. This URL specifies the base URL to the web interface (e.g., https://login.imagesilo.com/).

Reviewer specifies destruction schedule

This setting indicates that the destruction date/time will not automatically be calculated, but will be explicitly specified by the reviewer.

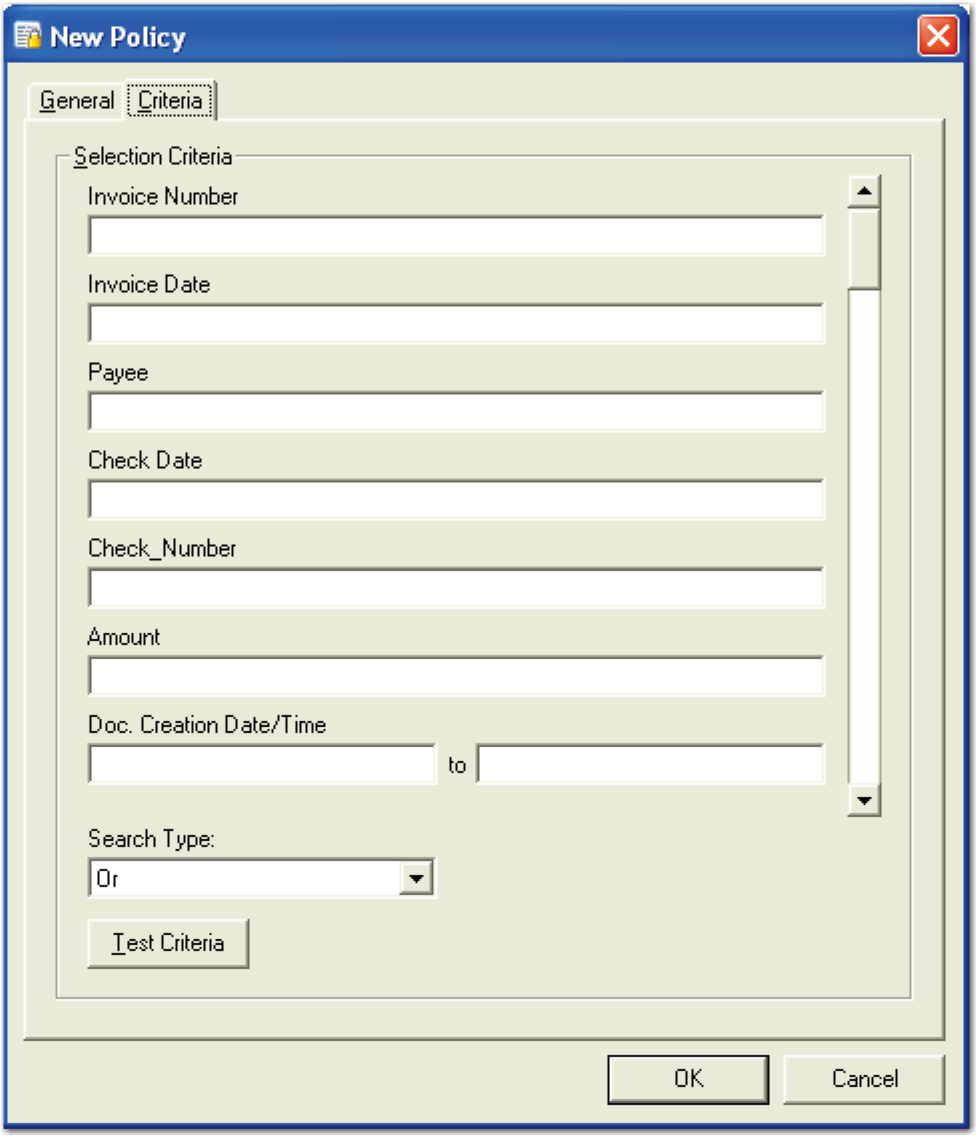
Destruction/Lock Offset

This setting indicates how destruction (or lock) dates are determined.

- **After documents are identified** indicates the time that the policy evaluation located documents that meet the criteria.
- **After destruction is approved** indicates the time that the reviewer approves destruction of the documents.
- **From document creation date/time** indicates the time that the document first entered the system.

Criteria Settings

In the Criteria tab, document selection criteria must be specified to determine which documents will be locked or marked for destruction. Index fields defined for the project are displayed in addition to the "Document Creation Date/Time".



Records Retention Policy – Criteria

When searching for dates in Records Retention Policy Criteria, the [CURRENTDATETIME] tag can be used to represent the current date and time that the search is run. This is particularly useful in situations where documents need to be identified that are of a certain age. A specified number of years (Y), months (M), days (D), hours (H), minutes (N), or seconds (S) can be added to or subtracted from the current date and time. Possible uses for the [CURRENTDATETIME] tag are as follows:

- [CURRENTDATETIME] = Current Date/Time
- [CURRENTDATETIME+1Y] = Current Date/Time plus 1 year
- [CURRENTDATETIME-12M] = Current Date/Time minus 12 months
- [CURRENTDATETIME+2D] = Current Date/Time plus 2 days
- [CURRENTDATETIME-96H] = Current Date/Time minus 96 hours
- [CURRENTDATETIME+900N] = Current Date/Time plus 900 minutes
- [CURRENTDATETIME+120S] = Current Date/Time plus 120 seconds

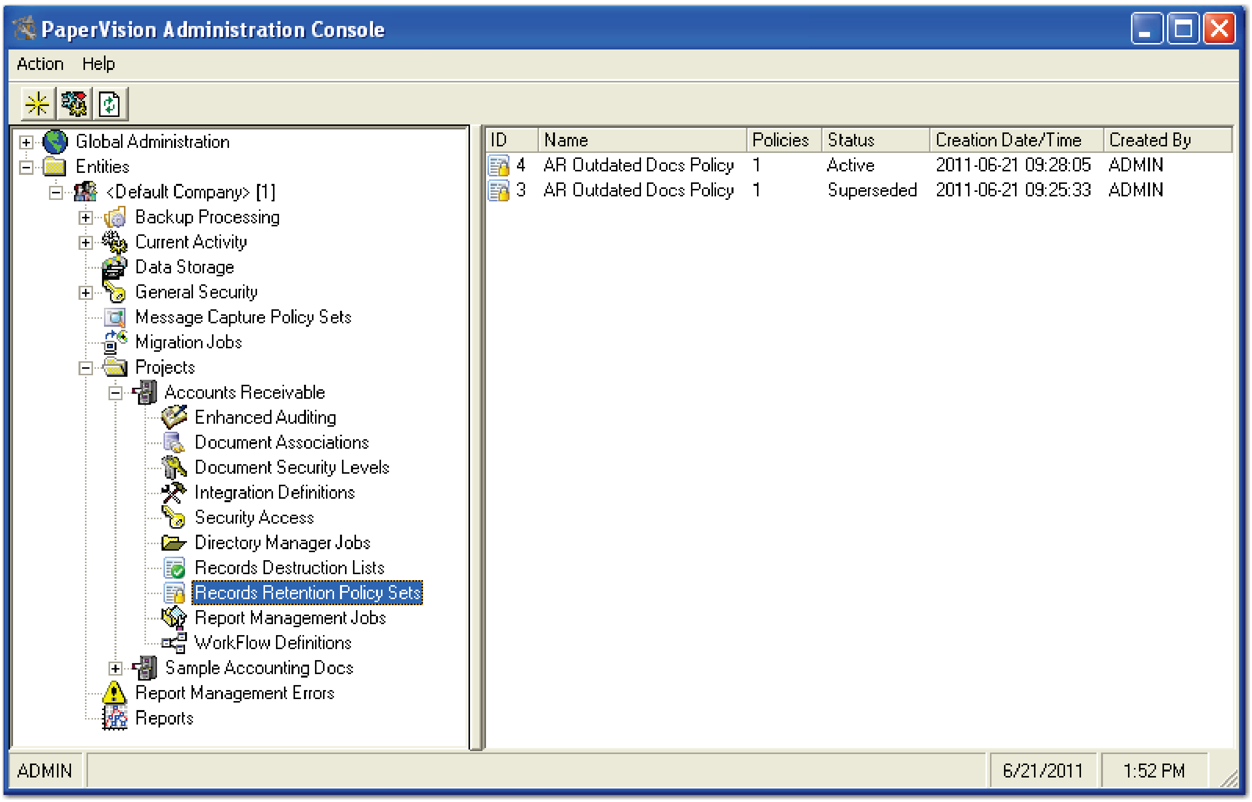
For more information on entering criteria, please refer to **Appendix E – Search Criteria.**

Records Retention Policy Set Configuration

You can add new records retention policy sets for any project in your entity.

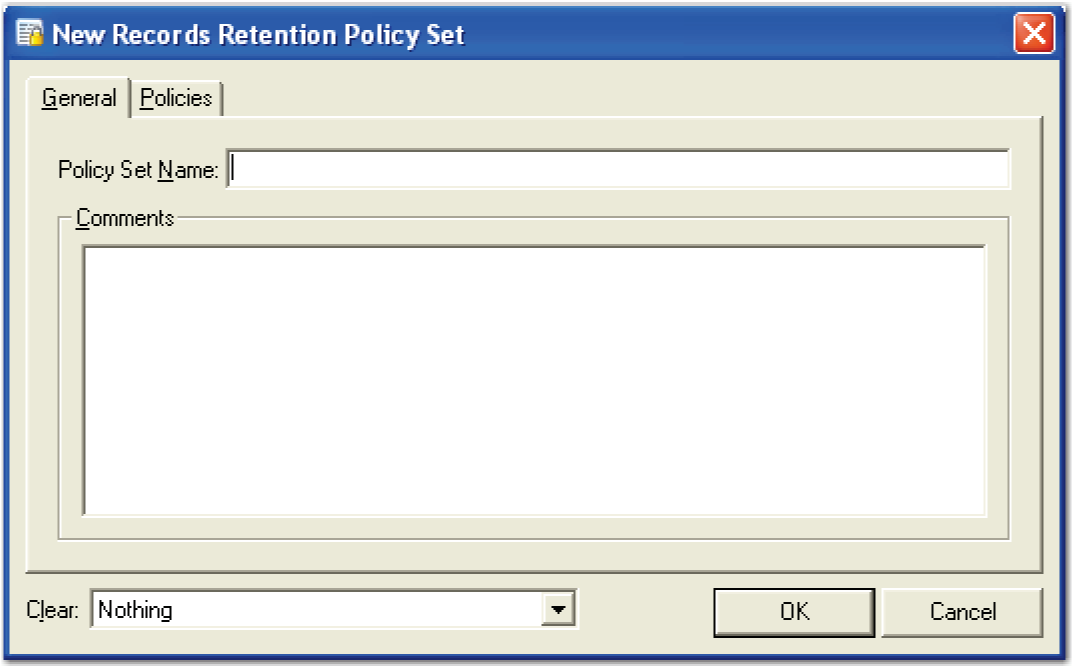
To create a new policy set:

1. Expand the appropriate project, and then select **Records Retention Policy Sets**. The **Records Retention Policy Sets** screen appears.



Records Retention Policy Sets

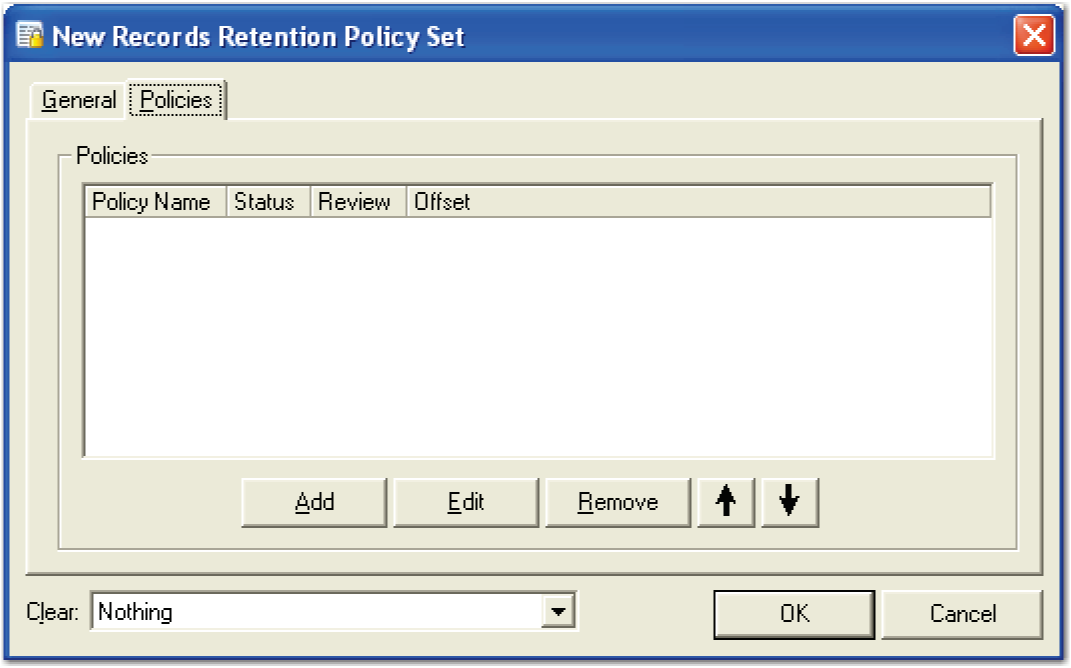
2. Click the **New** icon. The **New Records Retention Policy Set - General** dialog box appears.



New Records Retention Policy Set – General

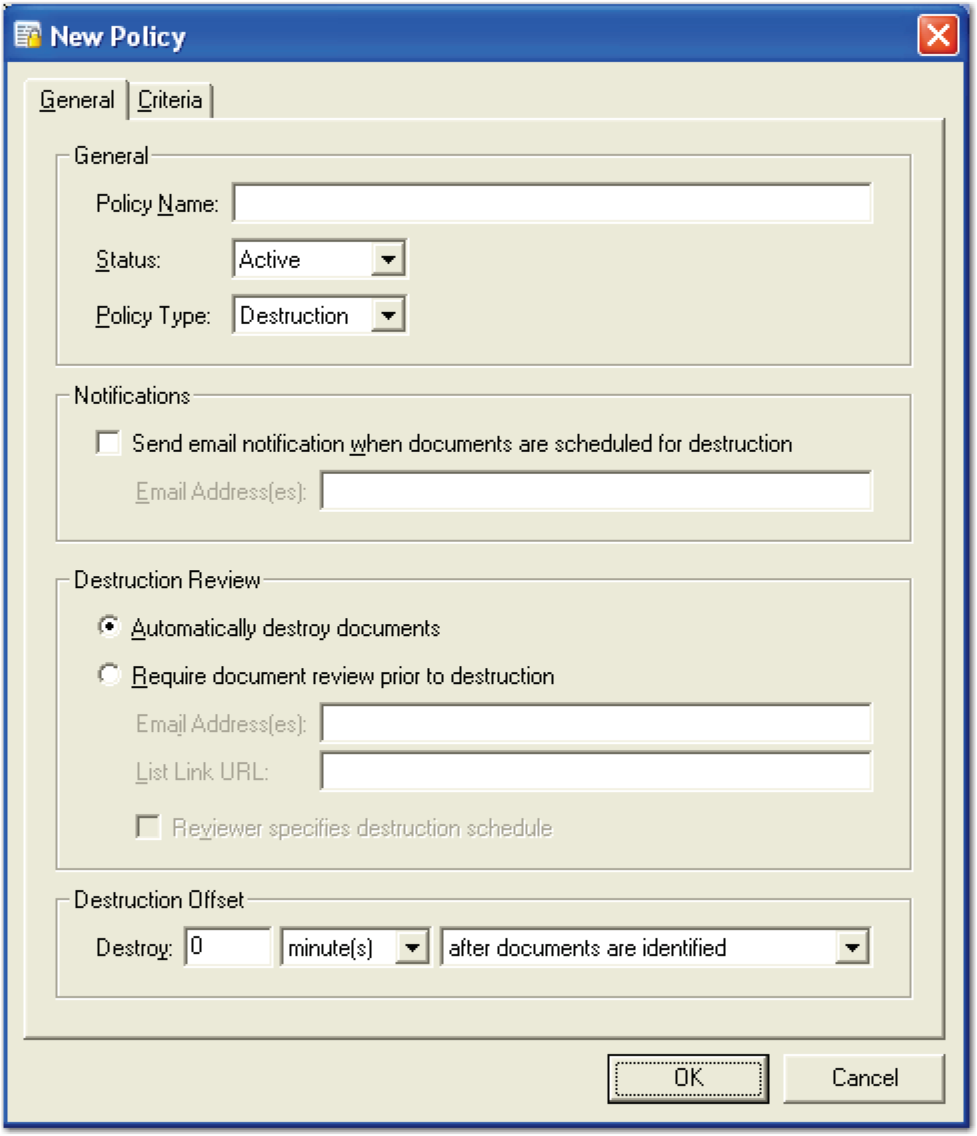
3. Enter a name for the new policy set.
4. Enter any comments as desired.
5. To have document destruction or lock information cleared, select the desired **Clear** setting.
   - **Nothing** specifies that no destruction or retention information should be cleared.
   - **Destruction Information** specifies that all destruction dates, destruction information, and destruction lists for all documents in this project will be cleared (no destruction scheduled for any documents).
   - **Lock Information** specifies that all lock dates and lock information for all documents in this project will be cleared (no locks maintained for any documents).
   - **Destruction and Lock Information** specifies that all destruction dates, destruction information, destruction lists, lock dates, and lock information for all documents in this project will be cleared (no destruction scheduled or locks maintained for any documents).

6. Select the **Policies** tab. The **New Records Retention Policy Set - Policies** dialog box appears.



New Records Retention Policy Set – Policies

7. Click **Add** to add a new policy. The **Records Retention Policy - General** dialog box appears.



Records Retention Policy – General

8. Configure the policy, and then click **OK** to save the policy. For descriptions of each policy setting, see the section on **Records Retention Policies**
9. Repeat steps 7 and 8 for any additional policies.
10. In the **New Records Retention Policy Set** dialog box, click **OK** to save the policy set.

11. Select **Yes** to save the policy set and make it the current, Active Policy Set (superseding any existing policy sets).

> **Note**:
>
> Any information that was selected in the **Clear** setting will be cleared immediately.

Importing a Records Retention Policy Set

PaperVision Enterprise includes the ability to import a policy set that was created by previously exporting the policy set. The import process will import the entire configuration.

To import a policy set:

1. In the **Records Retention Policy Sets** screen, click the **Import**  icon.
2. Select the XML file, and then click **Open**.
3. Click **OK**.

Deleting Records Retention Policy Sets

Both active and superseded policy sets can be deleted. When the active policy set is deleted, the most recent policy set left remaining (with the highest ID number) will become the active policy set.

To delete policy sets:

1. In the **Records Retention Policy Sets** screen, select one or more policy sets.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Exporting a Records Retention Policy Set

PaperVision Enterprise includes the ability to export policy sets. The export creates an XML document describing the policy set so it can be imported into another PaperVision Enterprise system. Each of the policy set properties is included in the XML document.

To export a policy set:

1. In the **Records Retention Policy Sets** screen**,** select the appropriate policy set.
2. Click the **Export**  icon.
3. In the **Export Records Retention Policy Set** dialog box, locate the directory where the export will be written.
4. Enter the file name for the export.
5. Click **Save**. A message will notify you where the export was written.

Editing an Existing Records Retention Policy Set

When you edit or save a policy set, the original policy set is not overwritten; it is superseded by the newly saved policy set. This is designed to provide an auditable list of policy sets.

To edit an existing policy set:

1. In the **Records Retention Policy Sets** screen, select the appropriate policy set.
2. Click the **Properties**  icon.
3. Make the necessary modifications to the policy set properties. For descriptions of each policy setting, see the section on **Records Retention Policies**
4. To clear document destruction or lock information, select the desired **Clear** setting in the **Records Retention Policy Set Properties** dialog box.
5. Click **Save**.
6. Select **Yes** to save the policy set and make it the current, Active Policy Set. This new policy set will supercede any existing policy sets. Any information that was selected to be cleared will be cleared immediately.

Activating a Superseded Records Retention Policy Set

When you activate a superseded policy set, the existing active policy set will become superseded.

To activate a superseded policy set:

1. In the **Records Retention Policy Sets** screen, select the superceded policy set.
2. Click the **Properties**  icon.
3. To clear document destruction or lock information, select the desired **Clear** setting in the **Records Retention Policy Set Properties** screen.
4. Click **Save** to activate the policy set.
5. Click **Yes** to save the policy set and make it the current Active Policy Set. This new policy set will supersede any existing policy sets. Any information that was selected to be cleared will be cleared immediately.

Records Destruction Lists

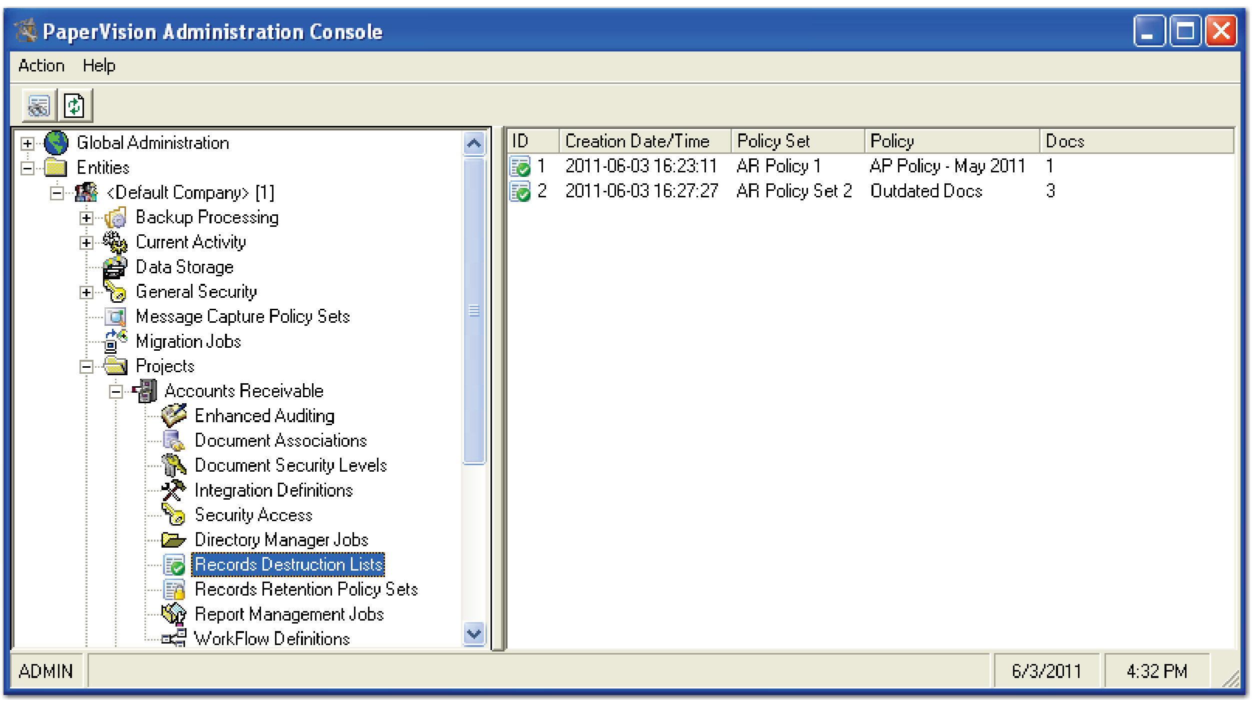
Records destruction lists are created when documents are identified by a destruction policy whose **Require document review prior to destruction** option has been selected. These lists are then made available for authorized users to either approve or deny the destruction of the documents contained within each list.

Administrators can have destruction lists deleted (without the documents being approved or denied) or cleaned up. The cleanup process recalculates the number of documents in each list. If the list no longer contains any documents it is automatically deleted.

Deleting Records Destruction Lists

To delete records destruction lists:

1. Expand the appropriate project, and then select **Records Destruction Lists**. The **Records Destruction Lists** screen appears.



Records Destruction Lists

2. Select one or more lists, and then click the **Delete** icon.
3. Click **Yes** to confirm the deletion.

Cleaning Up Records Destruction Lists

To cleanup records destruction lists:

1. In the **Records Destruction Lists** screen, select one or more items.
2. Click the **Cleanup Lists**  icon.
3. Click **Yes** to confirm and perform the cleanup. Each list's document count will be recalculated and any empty lists will automatically be deleted.

Chapter 7 – Message Capture

PaperVision Enterprise's Message Capture allows organizations to process and archive email messages through the PaperVision Enterprise system. When coupled with PaperVision Enterprise WorkFlow, it can provide comprehensive customer service solutions. Message Capture can process email messages from Microsoft Exchange as well as most Linux/Unix email systems.

Message Capture policies are configured in the PaperVision Enterprise Administration Console. The policies can be executed/enforced by the PaperVision Message Manager agents:

- **PaperVision Message Capture Harvester**: This stand-alone desktop application can process messages directly from Outlook PST files or Exchange mailboxes. Harvester never removes messages from the PST files or Exchange mailboxes.
- **PaperVision Message Capture Server**: This Windows service processes messages from directories containing journaled messages. Any messages that exist in the monitored directories are removed once they are evaluated.

Message Capture policies make extensive use of regular expressions. For a syntax guide on the use of regular expressions, see **Appendix F – Regular Expressions.**

File Sets

The PaperVision Message Capture engine creates "file sets" to allow processed information to be grouped into manageable chunks of data. These chunks of data are appended into data groups. The primary value of file sets is the ability to perform a "roll back", in which the data for the file set is removed from the PaperVision Enterprise system (no longer available for retrieval) and, based on the data group status, permanently removed from the data group. This function is useful in removing file sets that were created by a job that was incorrectly configured without affecting the rest of the information within the data group. When documents are deleted from a file set contained within a Read/Write data group, the data file containing the document's information is modified to completely remove the document from the file set.

Each message capture file set contains at least the following files:

- **Data File(s)**: These files contain the output message data. They are named with a .PVMSGDATx extension.
- **Offset File(s):** These files contain the offset data that is used to calculate where specific message data can be located within the corresponding data file. They are named with a .PVMSGOFFx extension.
- **Message File**: This file contains the document index values as well as the file set message numbers for each message. It is named with a .PVMSGDOC extension.
- **Info File**: This file contains the XML document describing the file set and summary information. It is named with a .PVMSGINFO extension.
- **Submit File**: The contents of this file are unimportant as the existence of this file is used to trigger import of the file set. It is named with a .SUBMIT extension. The .PVMSGSUBMIT file is generated when Message Capture closes the file set and it is ready to be imported into PaperVision Enterprise.

Non-Repudiation

As the message capture agents process messages into file sets, a hash value is calculated and stored for each message. When a message is retrieved by a user, the message hash is recalculated against the retrieved message and verified against the stored hash value to validate that the message has not been tampered with.

Document Indexing

PaperVision Message Capture always extracts the following index values from messages (regardless of project configuration). When the file sets are imported into PaperVision Enterprise, the import expects the project fields to be named exactly as follows:

- Sender
- Recipient
- Subject
- Message ID
- Message File Type
- Message Type
- Message Date/Time
- Message Size
- Message Attachment Name
- Message Encryption
- Message Priority
- Message Sensitivity
- Message Importance
- Message Source
- Message Envelope Journaled
- Classification
- Capture Policy
- Capture Date/Time

During the import process, if some or all of the index fields do not exist within the project, those index fields will simply be skipped. The fields can be added at a later date, and the file set re-imported to populate the fields. Additionally, not every email message will contain all of the specified index fields.

Note:

The **Subject** field is always truncated to a maximum of 900 characters due to a Microsoft SQL Server limitation of 900 bytes/characters in a database index.

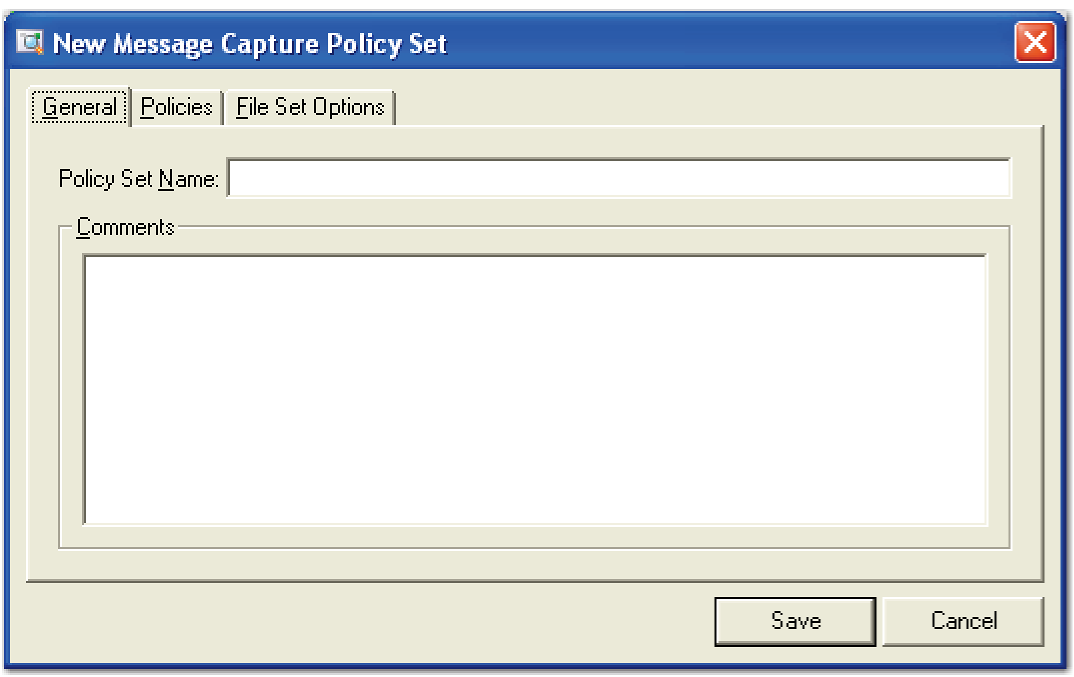
Message Capture Policy Sets

A policy set is used by a message capture agent to determine which messages should be retained and how those messages should be retained. There can only be one active policy set at a time. As such, each time a policy set is saved, the newly saved policy set is activated, and any existing policy sets are superseded. This maintains a fully auditable list of policy sets. Each file set references the policy set name and policy set ID that was used to capture the messages contained within it.

The policy set includes file set options (i.e. encryption and compression settings) as well as one or more policies. Each policy within the policy set is evaluated in the order in which it is displayed.

General Settings

General settings include the policy set name and additional comments about the policy set.



New Message Capture Policy Set - General

Policy Set Name

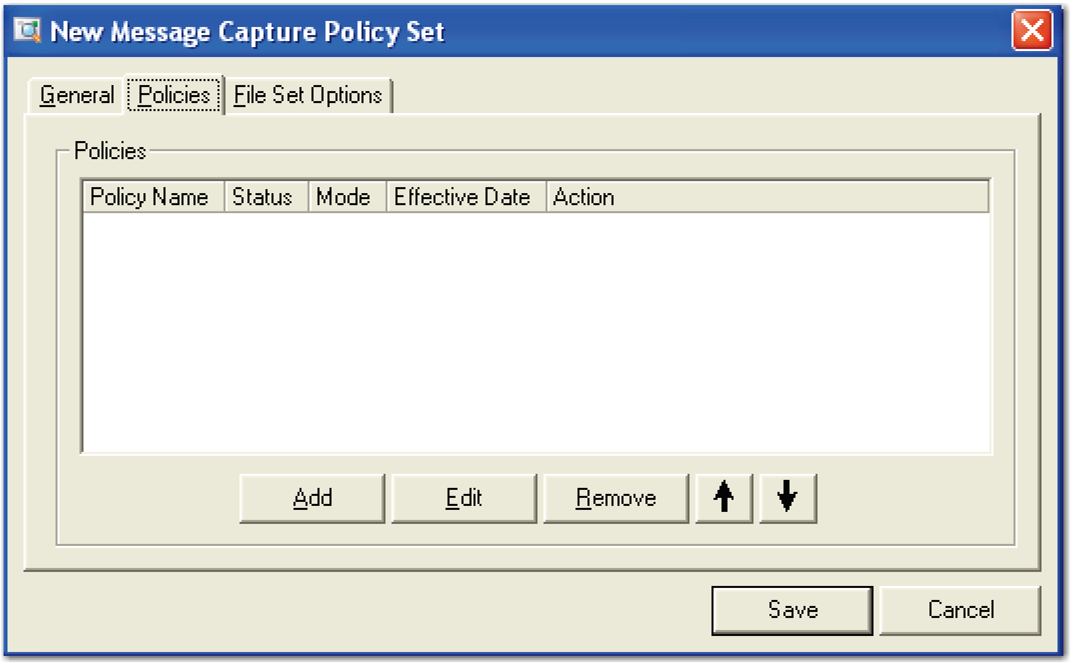
This setting specifies the unique name of the policy set.

Comments

Comments include descriptive information pertaining to the policy set.

Policies

The Policies tab allows you to add, edit, and remove message capture policies.



Message Capture Policy Set – Policies

Add

This operation allows you to add a new policy to the bottom of the policy set list.

Edit

This operation allows you edit the selected policy.

Remove

This operation allows you remove/delete the selected policies.

Up

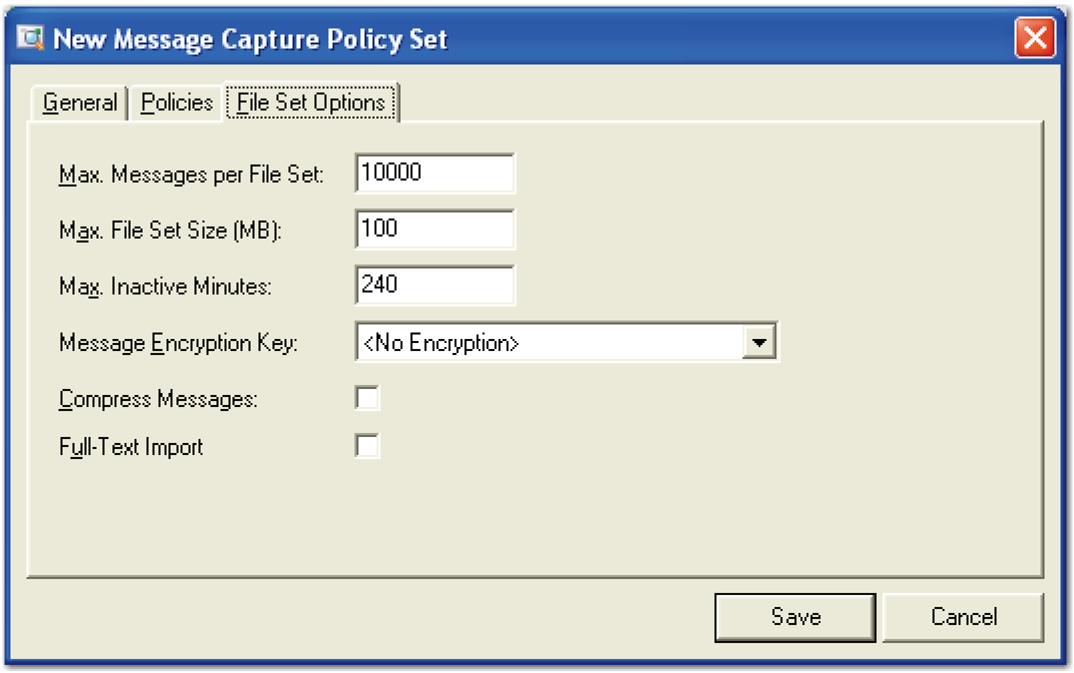
This operation allows you move the selected policy up in the evaluation list.

Down

This operation allows you move the selected policy down in the evaluation list.

File Set Options

File Set Options allow you to configure file set limits, message encryption key type, and whether to compress messages and process imports through the full-text indexing engine.



Message Capture Policy Set – File Set Options

Max. Messages per File Set

When the agent has inserted the specified number of messages into the file set, a new file set is created.

Max. File Set Size (MB)

If the file set reaches the specified maximum size, a new file set is created.

Max. Inactive Minutes

If the agent sits idle (waiting for new messages) past this number of minutes, a new file set is created.

Message Encryption Key

This setting specifies the encryption key to be used to encrypt messages as they are stored in the file set.

Compress Messages

This setting specifies that messages are to be compressed prior to being saved to the file set.

Full-Text Import

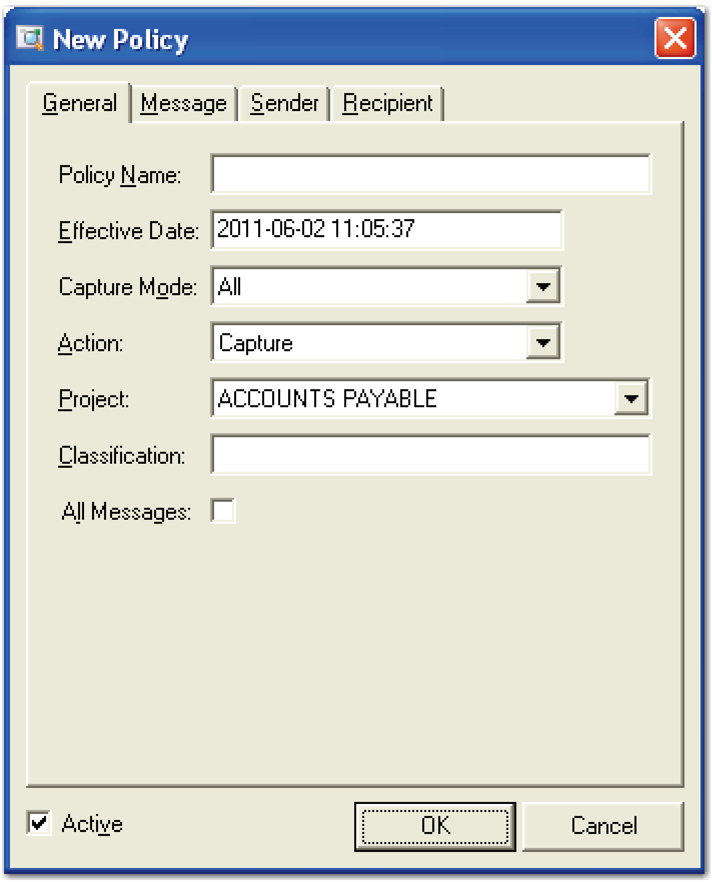
This setting instructs the import procedure to process the messages through the PaperVision Enterprise full-text indexing engine for full-text search capabilities.

Message Capture Policies

Each policy set must contain one or more policies. Each message is evaluated against each policy in the order that the policies are displayed. If a message meets a policy's criteria and that policy has an action value of "Drop", then the message will no longer be evaluated against any further policies. In order for a message to meet the policy's criteria, all of the specified fields' criteria must be met.

General Settings

General settings for Message Capture Policies include the new policy name, effective date, and other classification settings.



New Policy – General

Policy Name

The Policy name specifies the name of the policy within the policy set.

Effective Date

The Effective Date specifies the minimum date and time that the policy will be evaluated.

Capture Mode

The Capture Mode specifies which capture agents will utilize this policy:

- **All**: The policy will be utilized by both the Message Capture Server and the Message Capture Harvester.
- **Capture**: The policy will only be utilized by the Message Capture Server.
- **Harvester**: The policy will only be utilized by the Message Capture Harvester.

Action

The Action is what occurs in the event that the message meets the specified criteria:

- **Capture**: This action writes the message to the file set for the specified project. The message will not be evaluated against any additional policies.
- **Capture and Continue**: This action writes the message to the file set for the specified project. The message will continue to be evaluated against any additional policies.
- **Drop**: The message is not written and will not be evaluated against any additional policies.

Project

The Project is where the message is to be written into when the message is captured.

Classification

This setting provides a hard-coded index field value, "Classification", which will contain the specified index field value when the message is captured.

All Messages

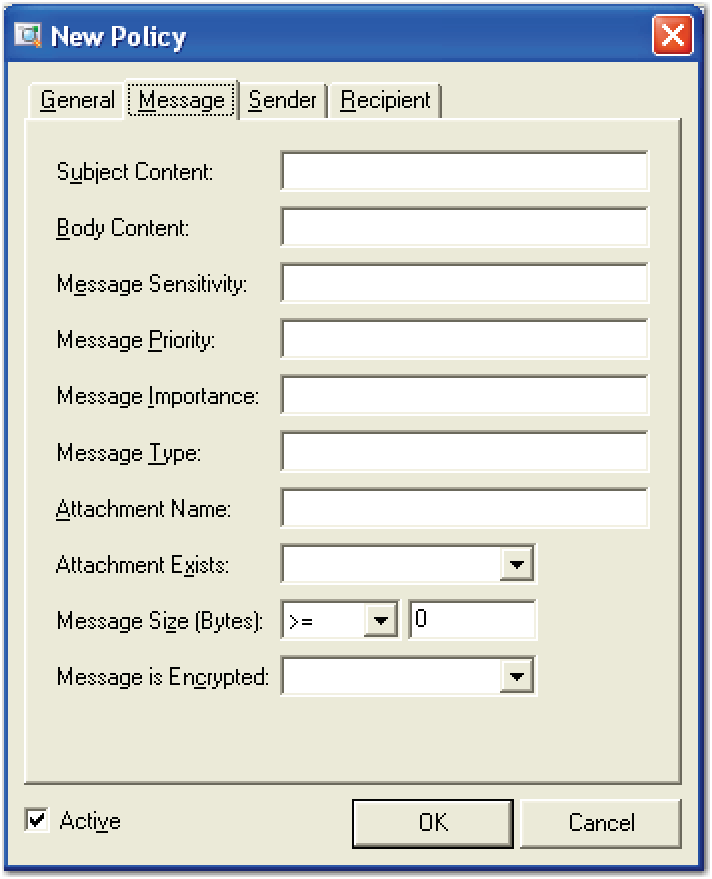
When selected, all messages evaluated by this policy will meet the policy's requirements. No message criteria are evaluated; the message automatically meets the criteria. Selecting this option negates the need to define any Message, Sender, or Recipient selection criteria.

Active

When selected, the policy is active. Inactive policies are not evaluated.

Message Settings

Message settings include message content, classification, attachment, and other related settings.



Message Capture Policy - Message

Subject Content

This regular expression specifies the subject content that must be met to meet the policy's criteria.

Body Content

This regular expression specifies the body content that must be met to meet the policy's criteria

Message Sensitivity

This setting specifies the message sensitivity that must be reached to meet the policy's criteria. This is not a regular expression, nor is it case-sensitive.

Message Priority

This setting specifies the message priority that must meet the policy's criteria. This is not a regular expression, nor is it case-sensitive.

Message Importance

This setting specifies the message importance that must meet the policy's criteria. This is not a regular expression, nor is it case-sensitive.

Message Type

This setting specifies the message type that must meet the policy's criteria. This is not a regular expression, nor is it case-sensitive.

Attachment Name

This setting is a regular expression that specifies an attachment name that must exist in order to meet the policy's criteria.

Attachment Exists

This setting specifies whether an attachment's existence is used in order to meet the policy's criteria:

- **<blank>**: The attachment is not evaluated.
- **True**: The message must have an attachment.
- **False**: The message must not have an attachment.
- **Message Size**: This value specifies that the message must be greater than or equal to or less than or equal to a specific size in order to meet the policy's criteria.

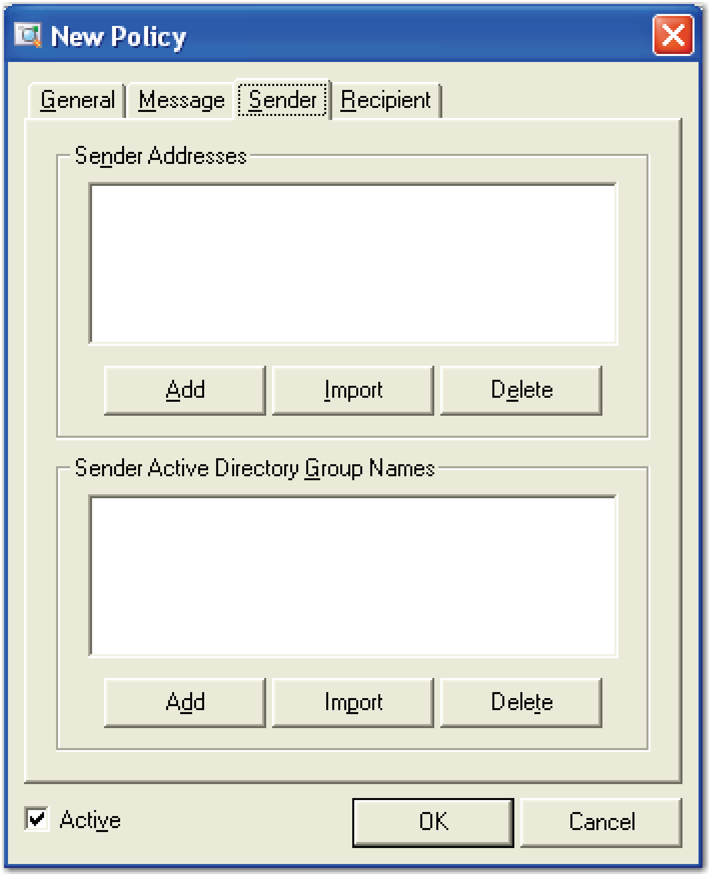
Message is Encrypted

This setting specifies whether a message's encryption is used in order to meet the policy's criteria:

- **<blank>**: Message encryption is not evaluated.
- **True**: The message must be encrypted.
- **False**: The message must not be encrypted.

Sender Settings

Sender settings allow you to add, import, and delete sender addresses and Active Directory group names.



Message Capture Policy – Sender

Sender Addresses

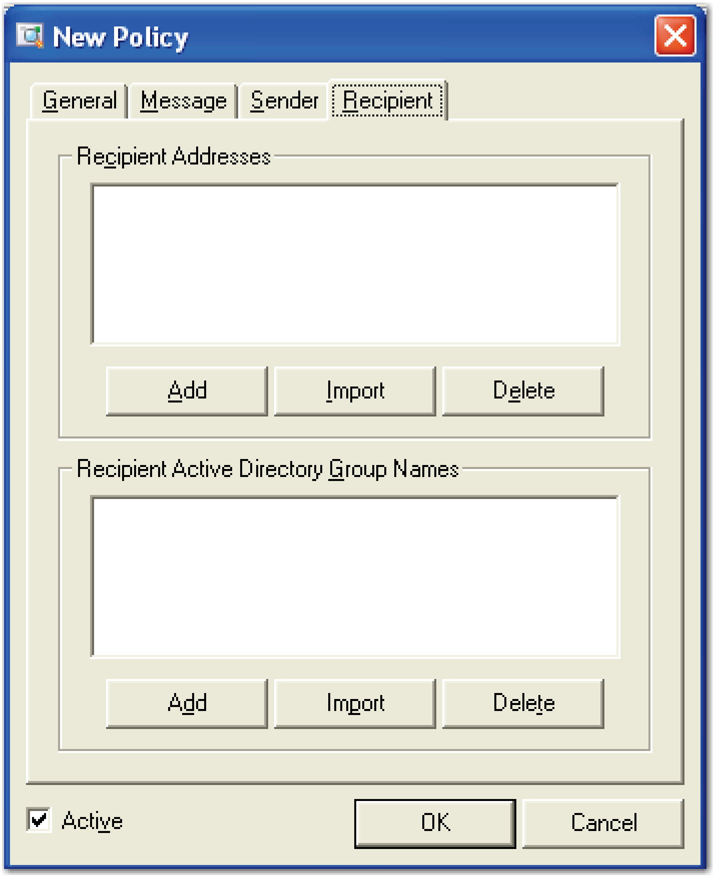
The Sender Addresses display a list of regular expressions that are evaluated. If the sender email address meets one of the regular expressions, the message is considered to have met the Sender Address criteria. You can click the **Import** button to import a line-delimited list of addresses.

Sender Active Directory Group Names

The list of Active Directory Group Names is not case-sensitive. When populated, each message's sender email address is evaluated against an Active Directory lookup to determine whether the sender falls within a specified group. If they are within at least one of the listed groups, the message is considered to have met the Sender Active Directory Group Names criteria. You can click the **Import** button to import a line-delimited list of group names.

Recipient Settings

Recipient settings allow you to add, import, and delete recipient addresses and Active Directory group names.



Message Capture Policy – Recipient

Recipient Addresses

The Recipient Addresses display a list of regular expressions that are evaluated. If the recipient email address meets one of the regular expressions, the message is considered to have met the Recipient Address criteria. You can click the **Import** button to import a line-delimited list of addresses.

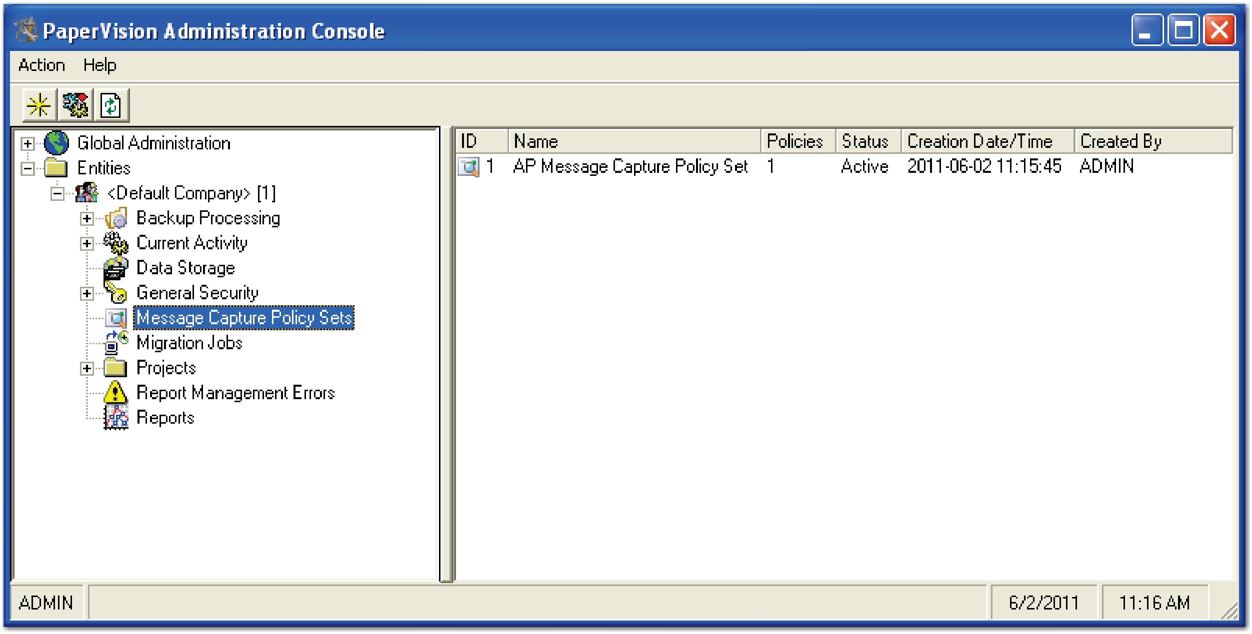
Recipient Active Directory Group Names

The list of Active Directory Group Names is not case-sensitive. When populated, each message's recipient email address is evaluated against an Active Directory lookup to determine whether the recipient falls within a specified group. If they are within at least one of the listed groups, the message is considered to have met the Recipient Active Directory Group Names criteria. You can click the **Import** button to import a line-delimited list of group names.

Configuring Message Capture Policy Sets

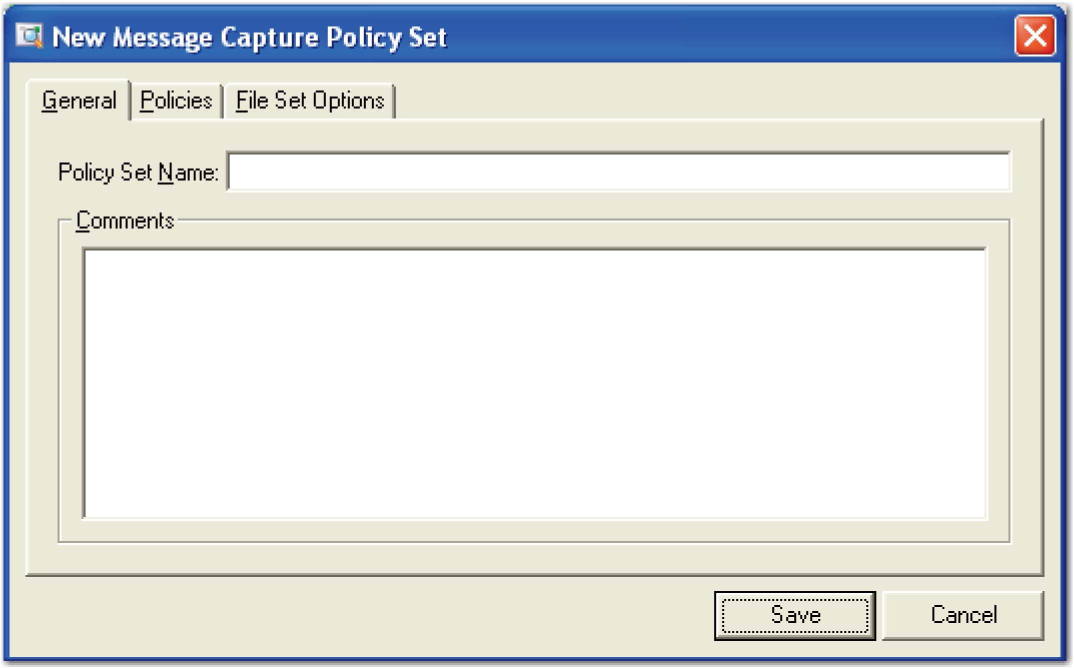
To create a new policy set:

1. Expand the appropriate entity, and then select **Message Capture Policy Sets.** The **Message Capture Policy Sets** screen appears.



Message Capture Policy Sets

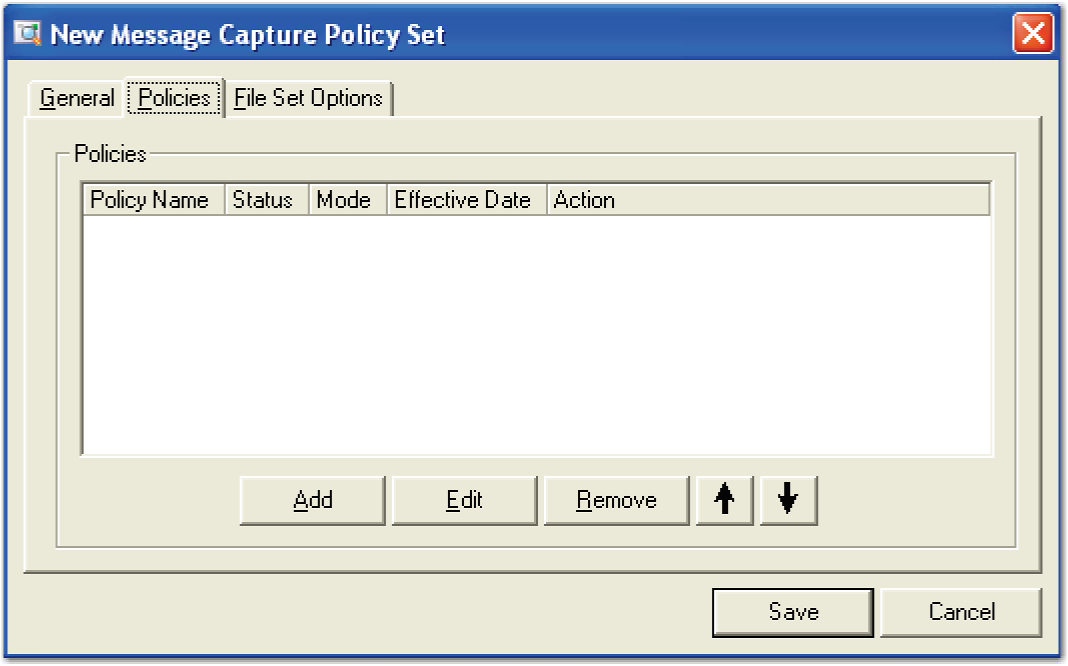
2. Click the **New** icon. The **New Message Capture Policy Set – General** dialog box appears.



New Message Capture Policy Set

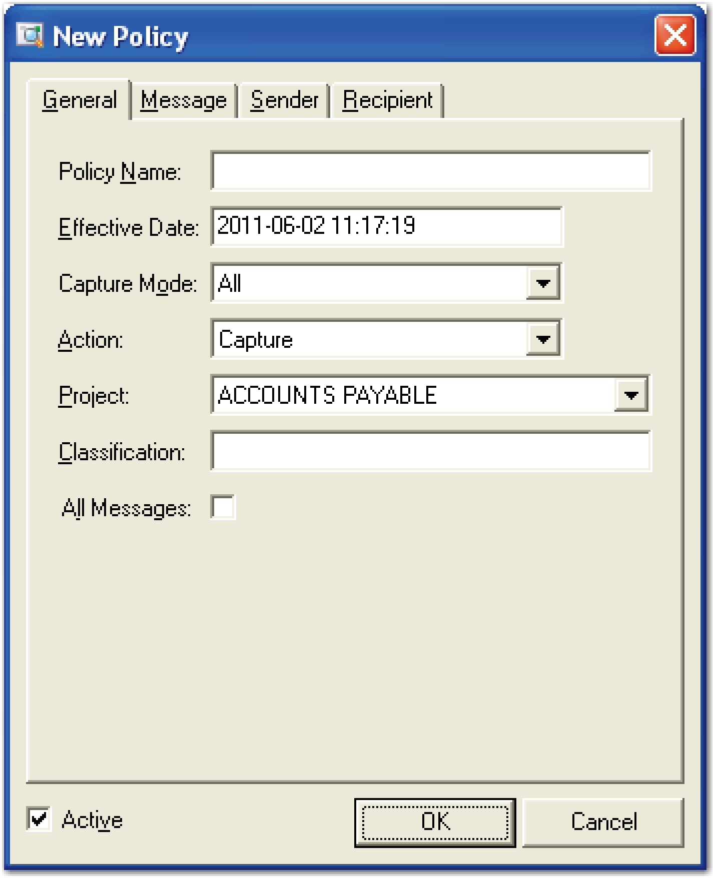
3. Enter a name for the new policy set.
4. Enter any comments (optional).

5. Select the **Policies** tab. The **Message Capture Policy Set - Policies** dialog box appears.



New Message Capture Policy Set – Policies

6. Click the **Add** button to add a new policy. The **Message Capture Policy - General** screen appears.

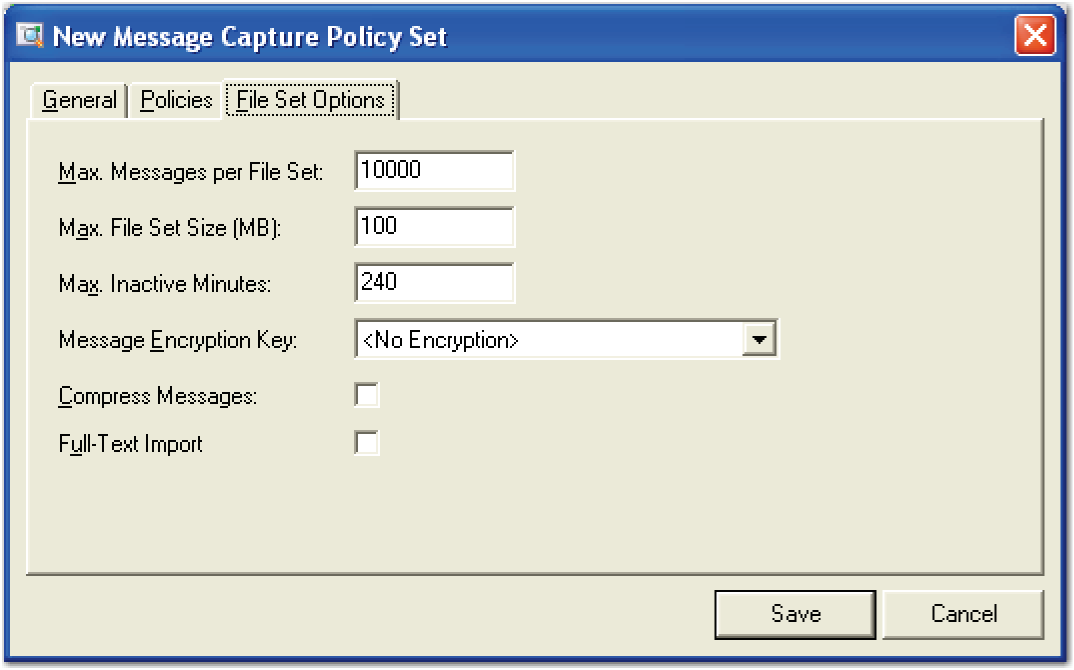


New Policy – General

7. Configure the policy as desired, and then click **OK**. For a description of each setting, see the section on **Message Capture Policies**

8. Repeat steps 6 and 7 for any additional policies.

9. Select the **File Set Options** tab. The **New Message Capture Policy Set – File Set Options** dialog box appears.



New Message Capture Policy Set – File Set Options

10. Modify the file set option settings as desired. For descriptions of each setting, see the section on **File Set Options.**
11. Click **Save**.
12. To make this new policy set the current, Active Policy Set, click **Yes**. The new policy set will become the current, Active Policy Set, superseding any existing policy sets.

Editing an Existing Message Capture Policy Set

When a policy set is edited and saved, the original policy set is not overwritten; it is superseded by the newly saved policy set. This process is designed to provide an auditable list of policy sets.

To edit an existing policy set:

1. In the **Message Capture Policy Sets** screen, select the appropriate policy set.
2. Click the **Properties**  icon.
3. In the **Message Capture Policy Set Properties** dialog box, make the necessary modifications to the policy set properties. For descriptions of each setting, see the section on **Message Capture Policies**
4. Click **Save**.
5. Click **Yes** to save the policy set and make it the current Active Policy Set, superseding any existing policy sets.

Activating a Superseded Message Capture Policy Set

Activating a superseded policy set causes the existing active policy set to become superseded.

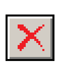
To activate a superseded policy set:

1. In the **Message Capture Policy Sets** screen, select the superceded policy set.
2. In the **Message Capture Policy Set Properties** dialog box, click **Save**.
3. Click **Yes** to save the policy set and make it the current Active Policy Set, superseding any existing policy sets.

Deleting Message Capture Policy Sets

Both active and superseded policy sets can be deleted. When the active policy set is deleted, the most recent policy set left remaining (with the highest ID number) will become the active policy set.

To delete message capture policy sets:

1. In the **Message Capture Policy Sets** screen, select or more policy sets.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion. The most recent policy set that is remaining will become the active policy set.

Exporting a Message Capture Policy Set

PaperVision Enterprise allows you to export message capture policy sets. The export creates an XML file describing the policy set so it can be imported into another PaperVision Enterprise system. All policy set properties are included in the XML document.

To export a message capture policy set:

1. In the **Message Capture Policy Sets** screen, select the appropriate policy set.
2. Click the **Export**  icon.
3. In the **Export Message Capture Policy Set** dialog box, locate the directory where the export will be written.
4. Enter the file name for the export.
5. Click **Save**. A message will notify you where the export was written.

Importing a Message Capture Policy Set

PaperVision Enterprise includes the ability to import a message capture policy set that was created by exporting the policy set. The import process will import the entire configuration.

To import a message capture policy set:

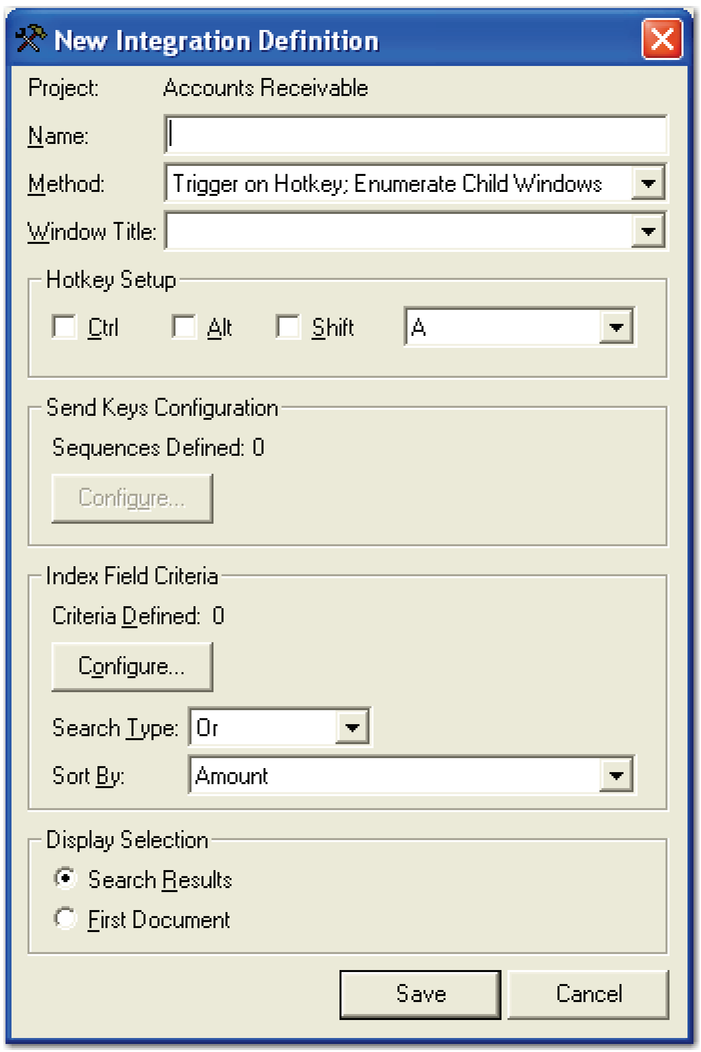
1. In the **Message Capture Policy Sets** screen, click the **Import**  icon.
2. Select the XML file, and then click **Open**.
3. Click **OK**. The imported message capture policy set will become the active policy set.

Chapter 8 – Integration Definitions

In addition to the extensive API and customization capabilities, PaperVision Enterprise's Integration Definitions can document-enable any Windows-based application, eliminating the need for administrators to write additional code or use APIs. Integration Definitions are project-level definitions that allow administrators to configure what triggers PaperVision Enterprise to launch, which data to extract when calling the third-party application, which index field values to search, and what to do with the search results (i.e. display a document). When a user logs into the PaperVision Enterprise Web Client running in Integration Mode, the system automatically retrieves the latest integration definitions.

Integration Definition Settings

The following section describes the settings available for configuration in PaperVision Enterprise's Integration Definitions.



Integration Definition

Project

This setting specifies the name of the associated project.

Name

This setting specifies the unique name of the integration definition.

Method

This setting specifies the action that triggers PaperVision Enterprise to launch as well as the method to extract data from the third-party application:

- **Trigger on Hotkey: Enumerate Child Windows**: This method causes the integration to launch when a specific hot key sequence is pressed when a user is viewing an application with your specified **Window Title** ("screen"). Once you have specified the Window Title, PaperVision Enterprise extracts all of the information from the specified "screen" by listing the contents of all of the child windows. Most items on a "screen" such as text boxes, labels, etc. are considered child windows.
- **Trigger on Hotkey: Send Keys for Clipboard**: This method causes the integration to launch when a specific hot key sequence is pressed when a user is viewing an application that has the specified **Window Title** ("screen"). Once you have specified the Window Title, PaperVision Enterprise sends a pre-defined sequence of keystrokes to the "screen" to copy specific data to the clipboard. PaperVision Enterprise then extracts the data from the clipboard. This method is particularly useful for a number of terminal emulation applications that do not utilize child windows.
- **Trigger on Clipboard**: This method causes the integration to launch when an application with your specified **Window Title** ("screen") has copied data to the windows clipboard. Once you have specified the Window Title, PaperVision Enterprise extracts the data from the clipboard.

> **Note**:
>
> Data is copied to the Windows clipboard from within the third-party application.

Window Title

This setting specifies the title of the application screen that integrates with PaperVision Enterprise. Triggers will only be passed to PaperVision Enterprise if your specified Window Title is found in the title of the application screen. In other words, your specified Window Title can indicate a portion of the application screen's title (e.g., you can specify "Notepad" for an application screen title of "Test.txt – Notepad"). You can select "<Any Window Title>" to have the system process the trigger for any running window, which is effective for applications that do not contain a constant value in their window titles.

Hotkey Setup

This setting specifies the hot key sequence that must be pressed to trigger the integration.

Send Keys Configuration

This setting allows you to define the keystroke sequence used in the Trigger on Hotkey; Send Keys for Clipboard method.

Index Field Criteria

This setting allows you to configure the index field search criteria based on the data extracted from the third-party application.

Search Type

This setting specifies the search type ("AND" or "OR") that is used when multiple index fields are being searched.

Sort By

This setting specifies how the search results are sorted.

Display Selection

This setting specifies what is displayed once the search has been executed.

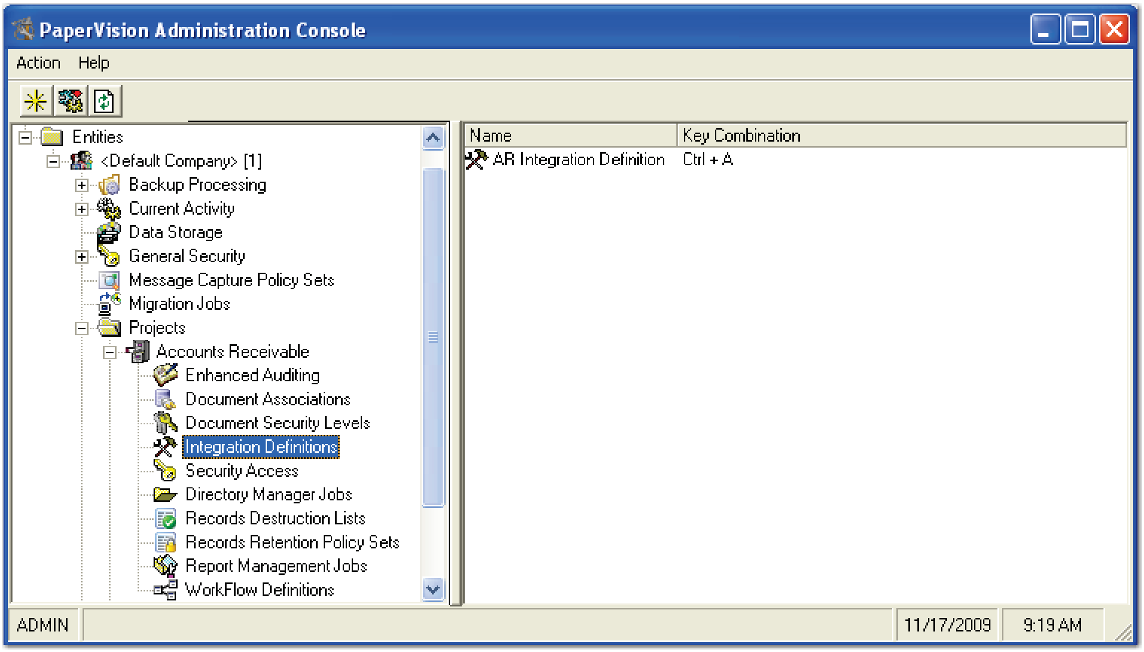
- Search Results: Displays the results of the search
- First Document: Displays the first document located that meets the search criteria

Creating a New Integration Definition

Within the Integration Definitions screen, you can add, edit, delete, import, and export definitions.

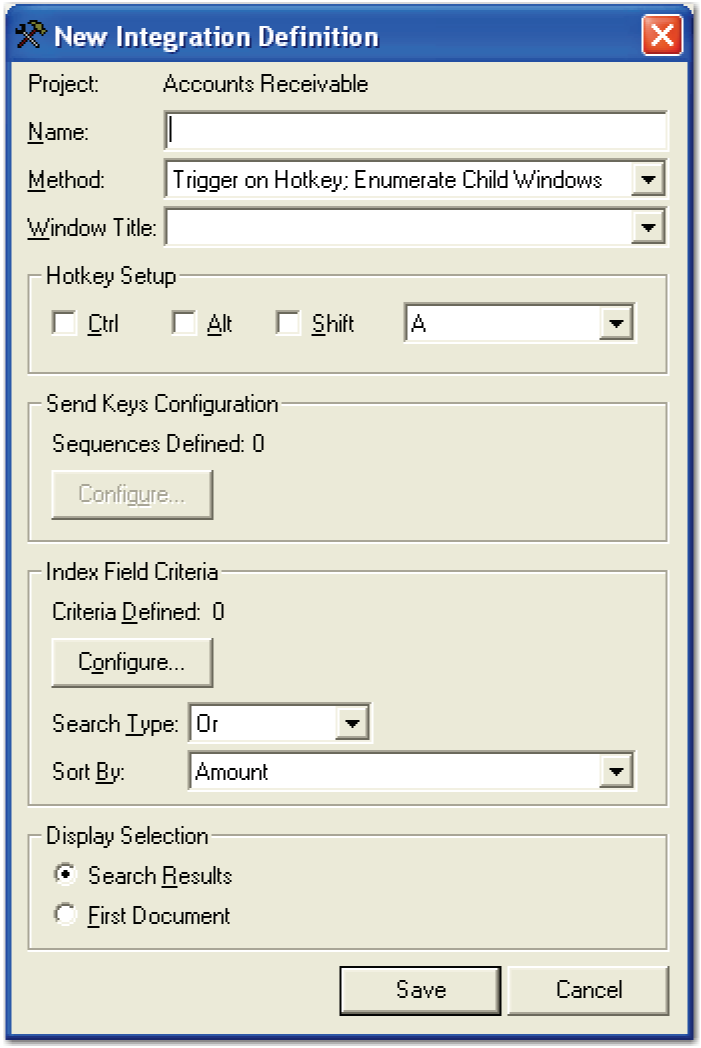
To create a new integration definition:

1. Expand the appropriate project, and then select **Integration Definitions**. The **Integration Definitions** screen appears.



Integration Definitions

2. Click the **New** icon. The **New Integration Definition** dialog box appears.

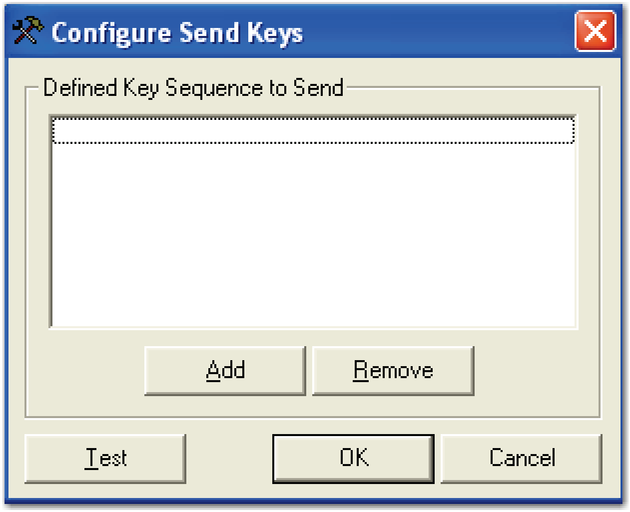


New Integration Definition

3. Provide a unique **Name** for the integration definition.
4. Select the **Method** used by the integration definition.
5. Select (or enter) a portion (or all) of the third-party application's **Window Title.**
6. If the selected Method includes **Trigger on Hotkey**, select the hot key sequence that will be used to trigger the integration.

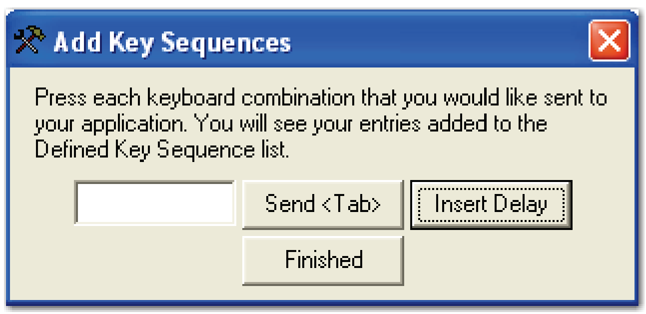
> **Note**:
>
> You must use a hot key that is not already used by the third-party application.

7. If the selected Method is **Trigger on Hotkey; Send Keys for Clipboard**, click **Configure** in the **Send Keys Configuration** section. The **Configure Send Keys** dialog box appears.



Configure Send Keys

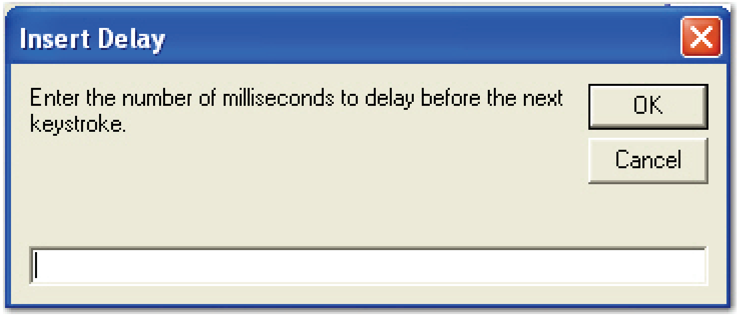
8. Click **Add**. The **Add Key Sequences** dialog box appears.



Add Key Sequences

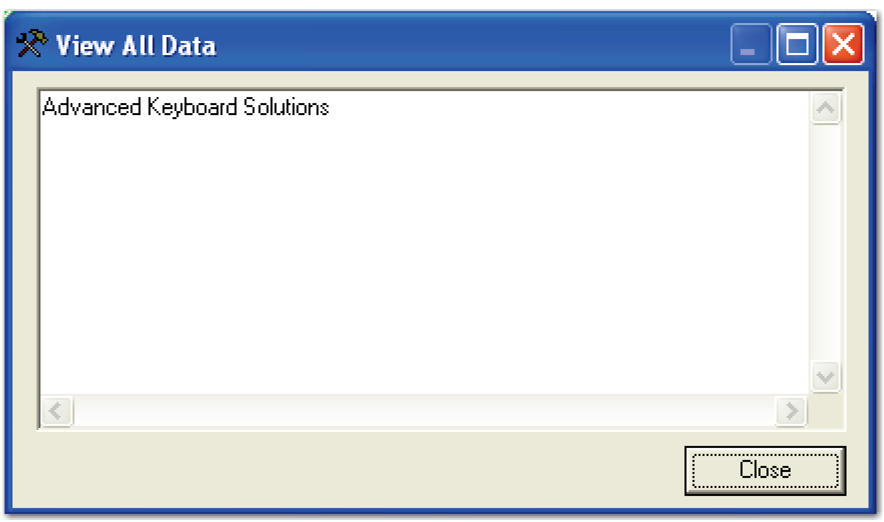
9. Enter the key sequence necessary to copy the data from the third-party application to the clipboard. Press the sequences on your keyboard as if you were entering them directly into your third-party application. As you type, you will see your entries added to the **Defined Key Sequence to Send** list.
10. If applicable, click the **Send <Tab>** button to send the Tab key to your application.

11. If applicable, click the **Insert Delay** button to insert a delay between keystrokes. The **Insert Delay** dialog box appears.



Insert Delay

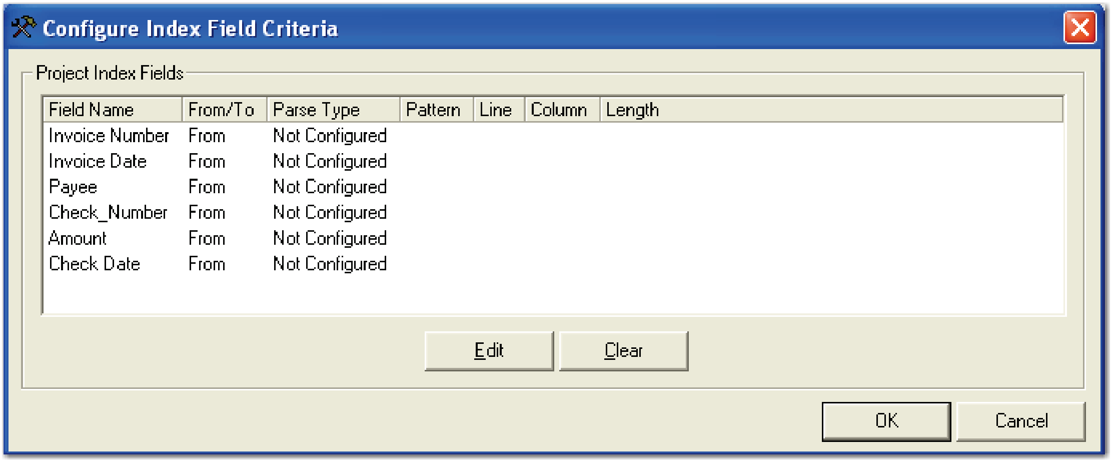
12. Inserting time delays between keystrokes provides additional time for third party applications to process input from PaperVision Enterprise. In the **Insert Delay** dialog box, enter the number of milliseconds to delay before the next keystroke, and then click **OK**.
13. In the **Add Key Sequences** dialog box, click **Finished** after you have entered all of the key sequences.
14. In the **Configure Send Keys** dialog box, click the **Test** button. PaperVision Enterprise will locate the appropriate Window Title, send the specified key sequence, and then display the raw data extracted from the application.



View All Data – Test Results

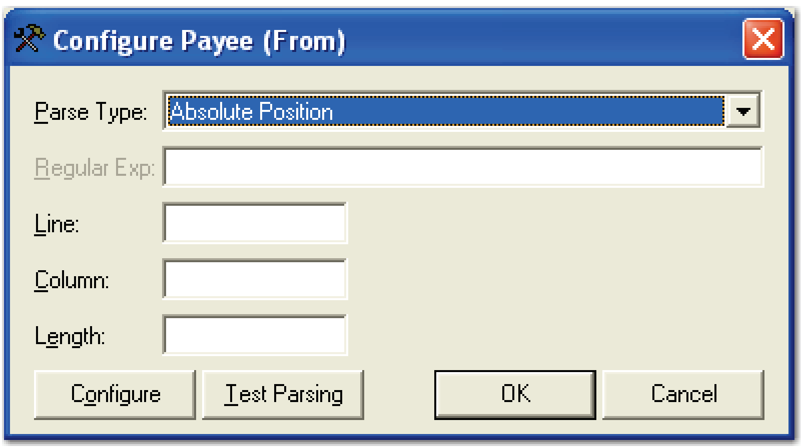
15. Click **OK** once you are satisfied with the test results.

16. Click **Configure** in the **Index Field Criteria** section. The **Configure Index Field Criteria** dialog box appears.



Configure Index Field Criteria

17. Select the index field to configure, and then click **Edit**. The **Configure Index Field** dialog box appears.



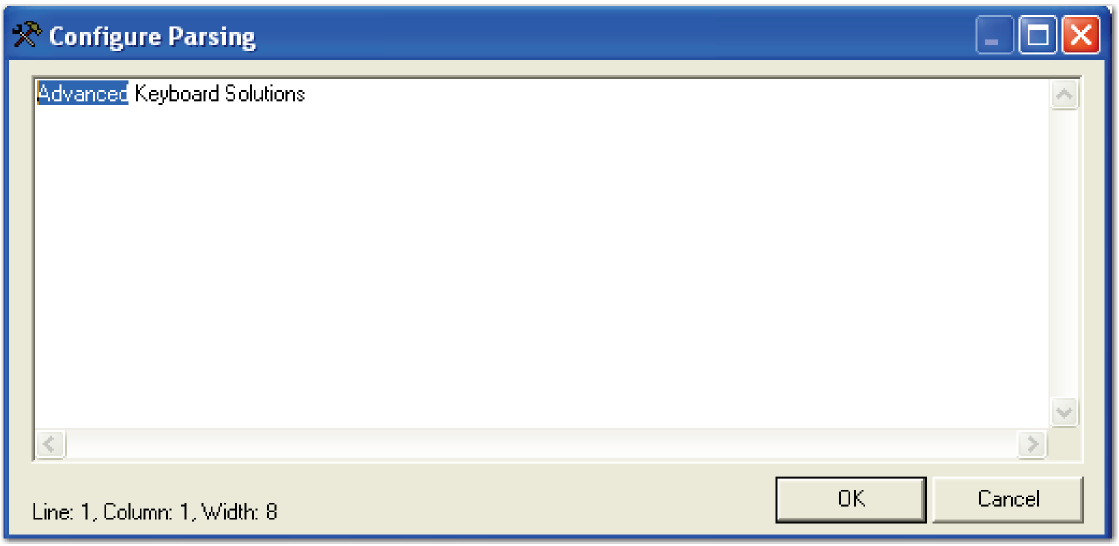
Configure Index Field

18. Select the **Parse Type** as described below:

- **Absolute Position**: This parse type extracts the index field data from a specified line and column position in the application's data.
- **Regular Expression**: This parse type locates the index field data that meets the specified regular expression.
- **Regular Expression/Position**: This parse type locates the first text occurrence that meets the regular expression. Then, the index field data is extracted based on position (line and column) from the first character of the found regular expression text.

19. If your Parse Type is **Regular Expression** or **Regular Expression/Position**, enter the **Regular Expression**. For more information, see **Appendix F – Regular Expressions**.
20. Click **Configure**. The data is extracted from the application and displayed in the **Configure Parsing** dialog box.

> **Note**:
>
> Configuring parsing is not necessary for a Parse Type of Regular Expression.

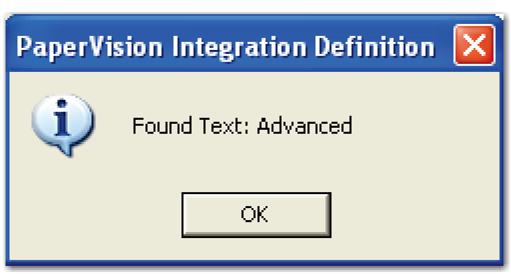


Configure Parsing

21. Highlight the data to extract for the index field search, and then click **OK.** The Line, Column, and Length fields are populated with the appropriate values.

> **Tip**:
>
> If your field length may be variable, assign a greater **Length** value in the **Configure Index Field** dialog box.

22. Click **Test Parsing**. PaperVision Enterprise will get the data and parse it as defined, displaying the text that was extracted for searching the index field.



Test Parsing

23. Click **OK** to save the index field configuration.

24. Repeat steps 16 through 23 for any additional index field search criteria.
25. Click **OK**.
26. In the **Integration Definitions** dialog box, select the **Search Type** and **Sort By** values.
27. Select the **Display Selection**.
28. Click **Save**.

Editing an Existing Integration Definition

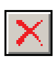
Modifications to integration definitions are downloaded by the PaperVision Enterprise Web Client running in Integration Mode when the user logs in.

To edit an existing integration definition:

1. In the **Integration Definitions** screen, select the appropriate integration definition.
2. Click the **Properties**  icon.
3. In the **Integration Definition Properties** dialog box, make the necessary modifications to the integration definition properties. For descriptions of each setting, see the section on **Integration Definitions**.
4. Click **Save**.

Deleting an Integration Definition

To delete an integration definition:

1. In the **Integration Definitions** screen, select one or more integration definitions.
2. Click the **Delete**  icon.
3. Click **Yes** to confirm the deletion.

Exporting an Integration Definition

PaperVision Enterprise includes the ability to export integration definitions. The export creates an XML document describing the definition so it can be imported into another PaperVision Enterprise system. All of the definition properties are included.

To export an integration definition:

1. In the **Integration Definitions** screen, select the appropriate integration definition.
2. Click the **Export**  icon.
3. Locate the directory where the export will be saved.
4. Enter the file name, and then click **Save.** You will be notified where the file was saved.

Importing an Integration Definition

PaperVision Enterprise includes the ability to import an integration definition that was created by previously exporting the configuration. The import process will import the entire definition.

To import an integration definition:

1. In the **Integration Definitions** screen, click the **Import** icon.
2. Select the XML file, and then click **Open**.
3. Click **OK**.

Chapter 9 – Report Management

PaperVision's Enterprise Report Management is an optional, separately licensed component of the PaperVision Enterprise suite. It allows users to perform COLD/ERM processing on print streams (up to 2 GB in size for each file), while extracting document index information. Report Management allows organizations to distribute printed reports and documents through the PaperVision Enterprise system without the need to scan the source documents. There are no separate components to install as PaperVision Enterprise and PaperVision.net Enterprise include the report management definition components. Report management job definition, management, and monitoring are accomplished through the PaperVision Enterprise Administration Console.

Report Management makes extensive use of regular expressions. For a syntax guide on the use of regular expressions, see **Appendix F – Regular Expressions.**

File Sets

The PaperVision Enterprise Report Management parsing engine creates "file sets" to allow processed information to be grouped into manageable chunks of data. These chunks of data are appended into data groups. The primary value of file sets is the ability to perform a "roll back", in which the data for the file set is removed from the PaperVision Enterprise system (no longer available for retrieval) and, based on the data group status, permanently removed from the data group. This function is useful in removing file sets that were created by a job that was incorrectly configured without affecting the rest of the information within the data group. Starting in PaperVision Enterprise R41, when documents are deleted from a file set contained within a Read/Write data group, the data file containing the document's information is modified to completely remove the document from the file set.

Each file set contains at least the following files:

- **Data File(s)**: These files contain the output page data. They are named with either a .PVERMCDATx or .PVERMDATx extension based on whether the data within the file set is compressed.
- **Offset File(s)**: These files contain the offset data that is used to calculate where a specific page of data can be located within the corresponding data file. They are named with a .PVERMOFFx extension.
- **Document File**: This file contains the document index values as well as the file set page numbers for the start and end pages of the document. It is named with a .PVERMDOC extension.
- **Info File**: This file contains the XML document describing the project configuration. It is named with a .PVERMINFO extension.
- **Submit File**: This file contains internal information pertaining to the parsing engine. It is named with a .PVERMSUBMIT extension.
- **Summary File**: This file contains the XML document describing which files were processed into the file set, the date and time the file set was started and finished, as well as the total number of documents, pages, bytes, and time. It is named with a .PVERMSUMM extension.

If the report management job includes form overlays, the file set will also include:

- **Overlay Definition File**: This file contains the XML document describing the form overlay configurations and application rules. It is named with the .PVERMOLDEF extension.
- **Overlay Image File(s)**: These files are the actual image files used as blank overlays when rendering a form overlay. They are named with a .PVERMOLx extension.

Document Indexing

PaperVision Enterprise Report Management offers extensive document index value extraction capabilities. In order to configure document indexing, it is beneficial to understand a few key concepts.

Regions

Regions are areas on a page from which one or many index values are extracted. Regions are either Normal Regions or Detail Regions. Each region contains one anchor and zero to many index values.

Normal Regions

Normal regions are used to locate index information that is extracted once within a document (e.g., Invoice Numbers, Date, Customer Name, etc.) and are located once on a page. Once the normal region has been located (by its anchor), index values are extracted and the indexing engine continues processing any other defined regions. It is common for normal regions to use either fixed or floating anchors.

Detail Regions

Detail regions are used to extract detail information from a document (e.g., part numbers from the detail listing of an invoice). Once the detail region has been located (by its anchor), index values are extracted. The system then repeats the process until the anchor can no longer be located on the page. Detail regions generally use floating anchors.

> **Note**:
>
> If a detail region is configured for a job, full-text data will not be imported into the retrieval system since detail field extraction creates "duplicate" documents (multiple document entries pointing to the same set of pages). Duplicate document full-text indexing results in the document being indexed as many times as there are duplicate entries. Generally, the use of detail regions and fields negates the need to perform full-text searches on the documents as the pertinent information has already been extracted.

Anchors

Anchors are used to identify regions on a page. Anchors can either be Fixed or Floating. Once an anchor is located, the region boundaries are determined by the region's offset from the anchor (in columns and rows).

Fixed Anchors

Fixed anchors are always located in the same position on the page (distanced from the top left corner).

Floating Anchors

Floating anchors are located by searching for a sequence of data within the page. The anchor is placed wherever the sequence is located, the region is identified, and index values are extracted. The engine then repeats this process until the sequence can no longer be located.

Floating anchors can only be located within their **Floating Anchor Sequence Range**, an area of the page in which the sequence search is to be performed.

Floating anchors can also have a **Validator Sequence**. Once a floating anchor is located, the system checks to see if the validator sequence can be located within the specified **Validator Sequence Range**. If not, the anchor is discarded. Validator sequences allow a secondary check to occur when the anchor is located.

Fields

Fields are used to extract document index fields or detail data from regions. Field locations are always fixed within their region (relative to the top left corner of the region).

Parsing Engine

The PaperVision Enterprise Report Management parsing engine processes information as outlined below:

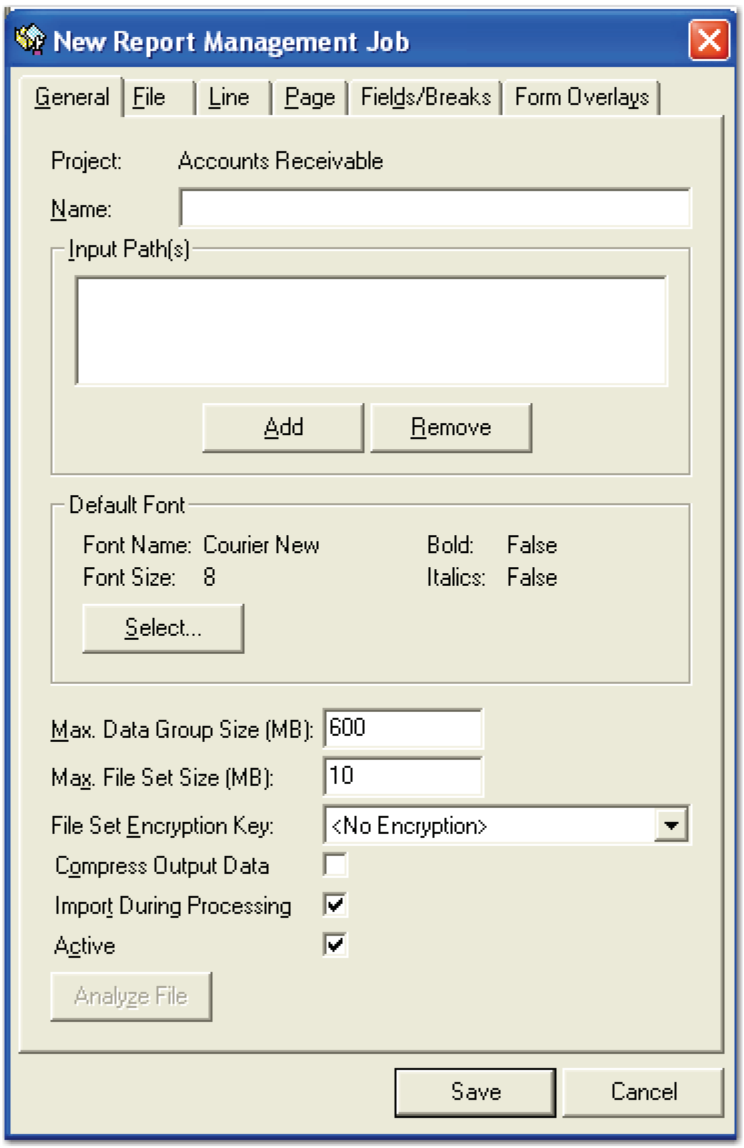
1. Grabs a block of data to parse
2. If necessary, converts EBCDIC to ASCII
3. Performs any defined Character Replacement operations
4. Performs any defined Text Sequence Removal (Raw Buffer) operations
5. If this is the first block of a file, performs any File Preamble Discard operations
6. If this is the first block of a file, performs any File Preamble Insert Spaces operations
7. Using the specified Line Delimiter Type, parses the incoming block of data into an array of lines (i.e. these are the same lines as lines on a page)
8. Performs any Line Pre-Processing operations
9. Using the defined Page Detection method, a Page is assembled from the lines. With the assembled page:
    a. Performs any Line Post-Processing operations
    b. Performs any Page Preamble Discard operations
    c. Performs any Page Preamble Insert operations
    d. Performs any Text Sequence Removal operations
    e. Performs any page length adjustments (i.e. Expand to Max Lines).
    f. Document index values are extracted from the page.
    g. Document break rules are evaluated. Once a document break has been identified (using ANY of the configured methods), the new document is assembled and no additional document break rules are evaluated.
    h. Page is written to the output file set.
10. Repeats step 9 for the lines that remain in the line array
11. When a file set has been created, the file set is moved into the output data group and, optionally, made available for retrieval.
12. Repeats steps 1 through 11 for any remaining blocks of data
13. Once a file has been successfully processed, it is either moved to the specified Local Output Destination (in System Settings) into a directory called "Successfully Processed" or deleted (based on your System Settings). If a file fails to process, it is moved to a directory called "Failed to Process". The contents of the source files are not modified in any manner.

Report Management Jobs

PaperVision Enterprise Report Management allows administrators to define jobs graphically, without any programming or scripting.

General Settings

General settings allow you to customize the report management job name, input path, default font, and other parameters affecting the report management job.



Report Management Job – General

Project

This setting specifies the name of the associated project.

Name

This setting specifies the unique name of the report management job.

Input Paths

When the parsing engine starts, it checks the specified input paths to see if any files exist. All of the files that exist in the specified directories will be processed.

Default Font

This is the font to be used when configuring fields and document breaks.

Max. Data Group Size (MB)

Once a file set has been created during processing, the engine will attempt to look for a read/write-enabled data group with enough space to append the file set without exceeding this value. If one cannot be found, a new data group will automatically be created for the file set.

Max File Set Size (MB)

This setting specifies the maximum size of each file set. This is particularly useful for limiting how much data would be "rolled back" when a configuration mistake is made. It is important to note that this value is considered after an entire document has been written to a file set. In other words, a single document will not be spread across multiple file sets. This could result in the file set size exceeding this value in some instances.

File Set Encryption Key

This setting specifies the encryption key to be used when the file set is created. If a file set is encrypted, when documents are retrieved from the file set, they will automatically be decrypted for viewing.

Compress Output Data

This setting specifies whether page contents are to be compressed prior to being written to the file set’s data file. Compressing the output increases system overhead during processing, importing data groups, and retrieving documents, but significantly decreases the size of the resulting file set.

Import During Processing

Once a file set has been created and appended to the appropriate data group, the file set can be immediately imported into the PaperVision Enterprise system for retrieval if this option is selected.

Active

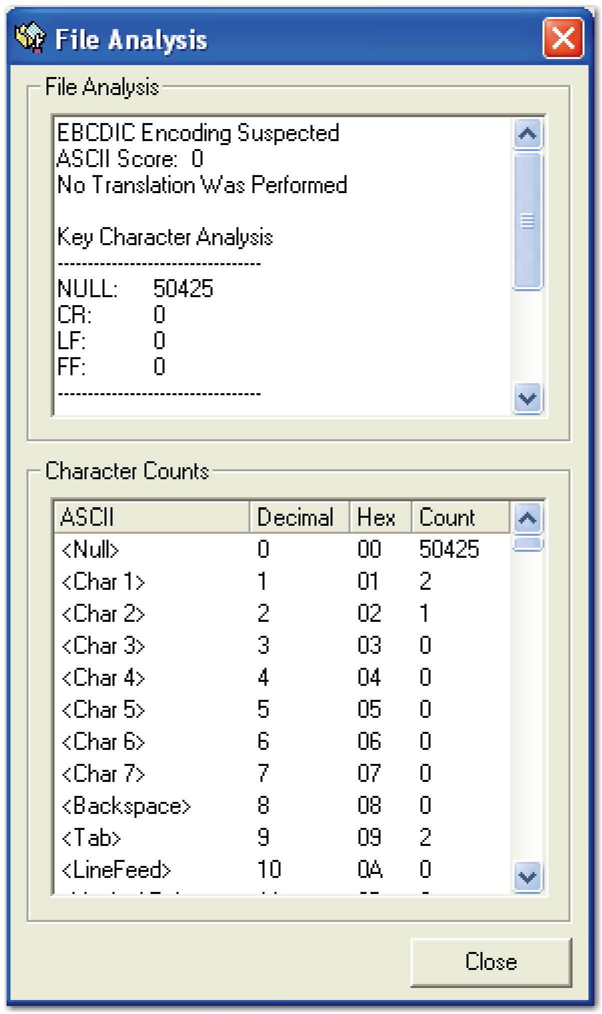
This setting specifies whether or not the job is to be processed during automated processing.

Analyze File

This operation allows you to perform an analysis on a sample input file. For more information, see the next section.

File Analysis

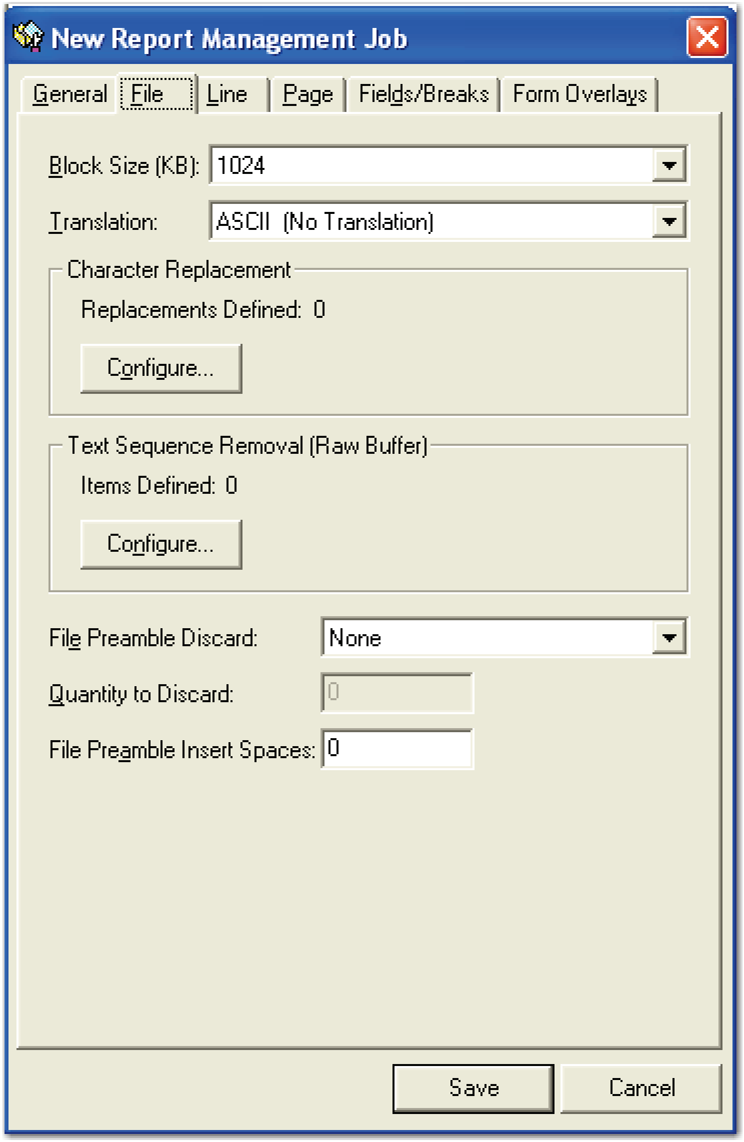
The Analyze File operation performs a file analysis on a portion of the sample file that gives clues as to the contents of the file, as well as different settings that might be helpful. For instance, it can recommend to use EBCDIC translation if it suspects that the file is not an ASCII file. Also, line delimiting may be recommended based on the carriage return/line feed count. In addition to these recommendations, a character count is displayed showing the ASCII decimal value, hexadecimal value, and number of occurrences of each character. This can be useful in determining if certain hidden characters need to be replaced or discarded (such as Null characters).



File Analysis

File Settings

File settings allow you to configure the block size, translation type, character replacement, text sequence removal, and other related settings.



Report Management Job – File Settings

Block Size

As the parser reads the incoming files, it grabs chunks of data, called "blocks". This setting allows you to fine-tune the size of the block that is imported. Larger block sizes are generally faster (as fewer file reading operations are required), but could bog down a server with little available memory.

Translation

PaperVision Enterprise can translate different variations of EBCDIC during processing, including:

- CP037 US/Canada 3270 Superset
- CP500 International Latin 1
- Base 3270 ASCII Superset

Character Replacement

Once the raw block of data has been read, the engine can perform character removal or replacement before any further processing. This is particularly useful for removing hidden characters (such as null characters).

Text Sequence Removal (Raw Buffer)

Once any character replacement has been completed, the engine can search for and remove regular expressions before any further processing. This option is useful when reports have embedded printer codes which cannot be processed or include mainframe job related information embedded within files.

File Preamble Discard/ Quantity to Discard

Input files often have header information that should be stripped prior to processing. These options allow you to specify how many lines, words, or characters should be stripped from the beginning of each file prior to processing.

File Preamble Insert Spaces

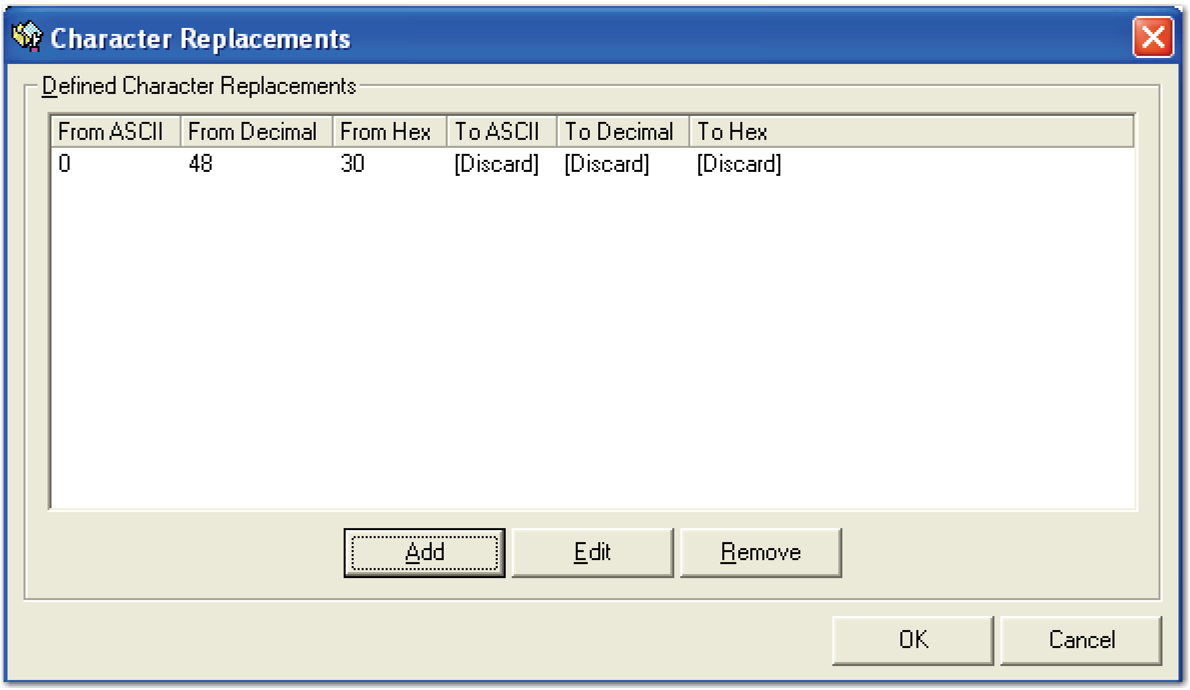
Some instances require that spaces be inserted in order for the remainder of the data to "line up" properly. This option allows you to specify how many blank spaces should be inserted at the beginning of each file's data.

Character Replacement

The Character Replacement File setting allows you to replace or remove any unwanted characters from the raw input block prior to any processing. The Character Replacements dialog box lists any defined character replacements that have been configured.

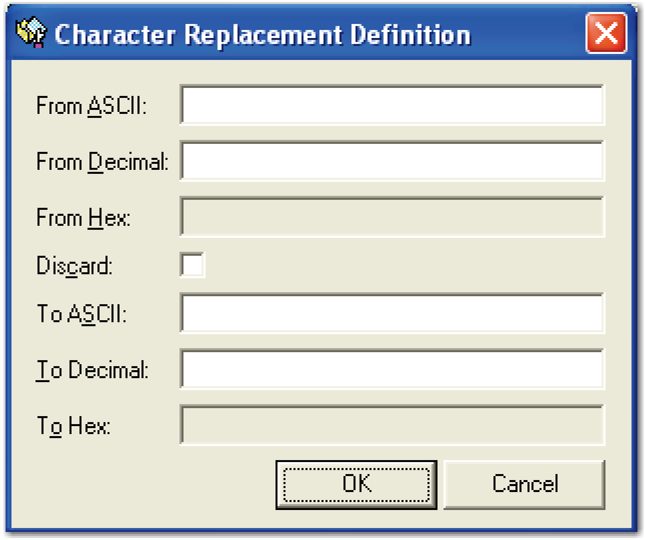
To add or edit character replacements:

1. In the **File** tab, click the **Configure** button in the **Character Replacement** section. The **Character Replacements** dialog box appears.



Character Replacements

2. Click **Add** or **Edit**. The **Character Replacement Definition** dialog box appears.



Character Replacement Definition

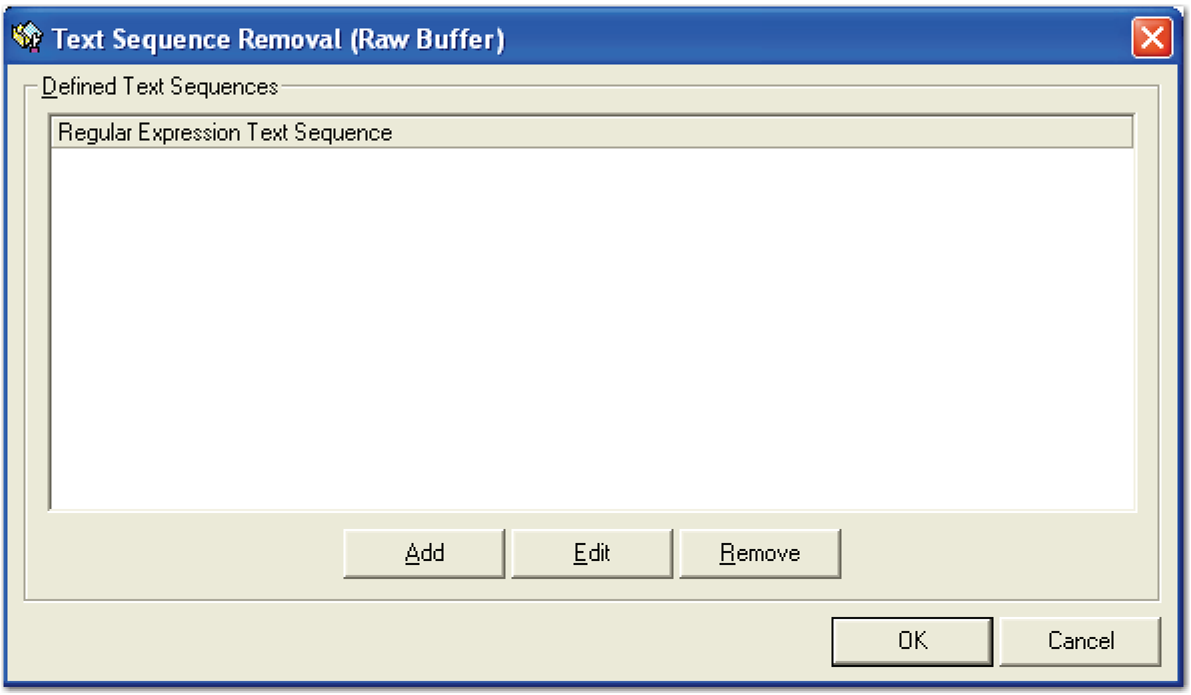
3. Assign the appropriate settings (described below), and then click **OK**:
   - **From ASCII:** ASCII character that is being replaced or discarded
   - **From Decimal:** Decimal number of the character that is to be replaced or discarded
   - **From Hex:** Hexadecimal number of the character that is to be replaced or discarded
   - **Discard:** Specifies that the character is to be discarded (not replaced with another character)
   - **To ASCII:** ASCII character that is used to replace the desired character
   - **To Decimal:** Decimal number of the character used to replace the desired character
   - **To Hex:** Hexadecimal number of the character used to replace the desired character

Text Sequence Removal (Raw Buffer)

Text sequence removal provides a means to search for a regular expression in the incoming block of data and have it completely removed. This process will extract bothersome control sequences that affect page output and display. Additional information on regular expressions can be located in **Appendix F – Regular Expressions.** You can add, edit, or remove individual sequences.

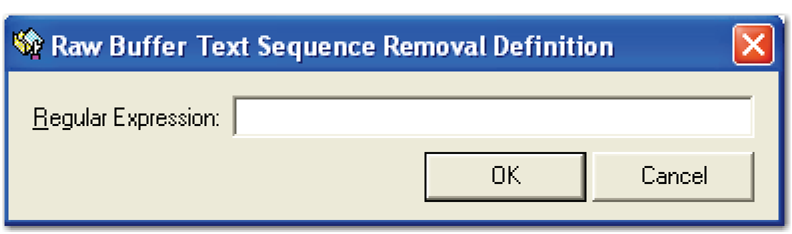
To add or edit text sequences:

1. In the **File** tab, click the **Configure** button in the **Text Removal Sequence (Raw Buffer)** section. The **Text Sequence Removal (Raw Buffer)** dialog box appears.



Text Sequence Removal (Raw Buffer)

2. Click **Add** or **Edit**. The **Raw Buffer Text Sequence Removal Definition** dialog box appears.

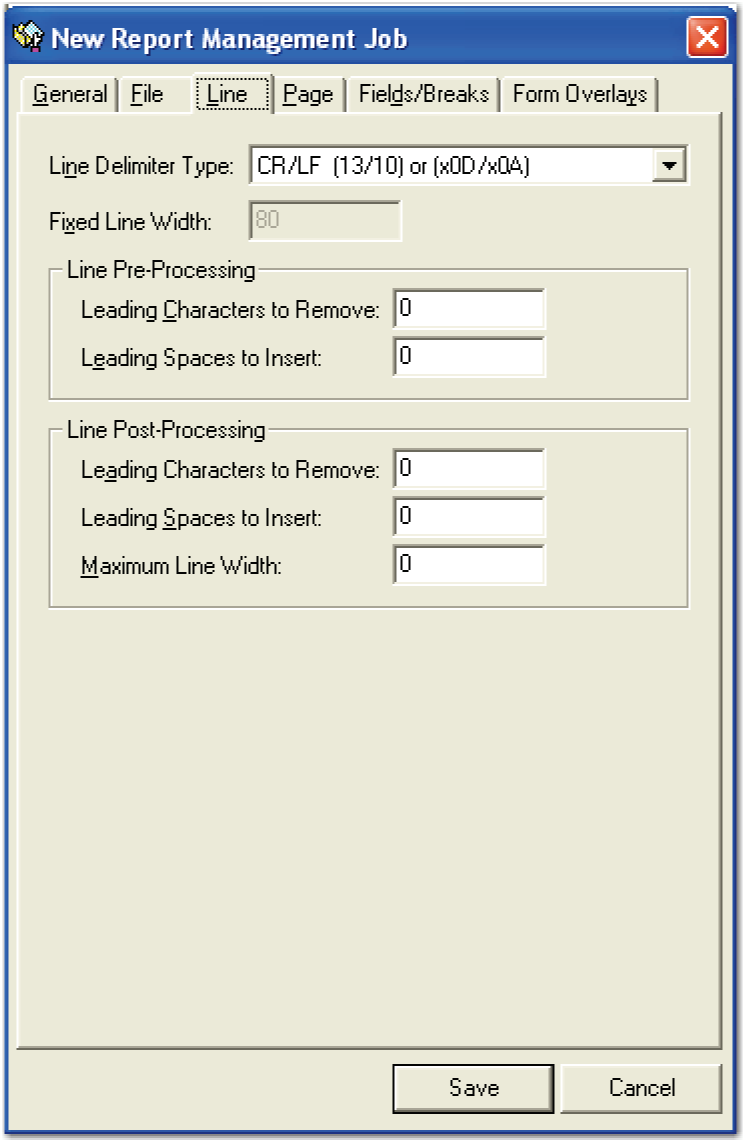


Raw Buffer Text Sequence Removal Definition

3. Enter the regular expression, and then click **OK**.

Line Settings

Line settings allow you to configure the line delimiter type and line pre- and post-processing parameters.



New Report Management Job – Line Settings

Line Delimiter Type

Once the raw data has been gathered and pre-processed, it must be assembled in to lines (i.e. lines on a page). The Analyze File operation can assist you in determining the correct value to use for this setting:

- CR/LF uses the carriage return/line feed combination to delimit lines from each other.
- CR Only uses only the carriage return character to delimit lines from each other.
- LF Only uses the line feed character to delimit lines from each other.
- Null Character uses the null character to delimit lines from each other.
- Fixed Line Width specifies that each line is a fixed number of characters wide.

Fixed Line Width

This value specifies the number of characters in each line when using the "Fixed Line Width" Line Delimiter Type.

Line Pre-Processing

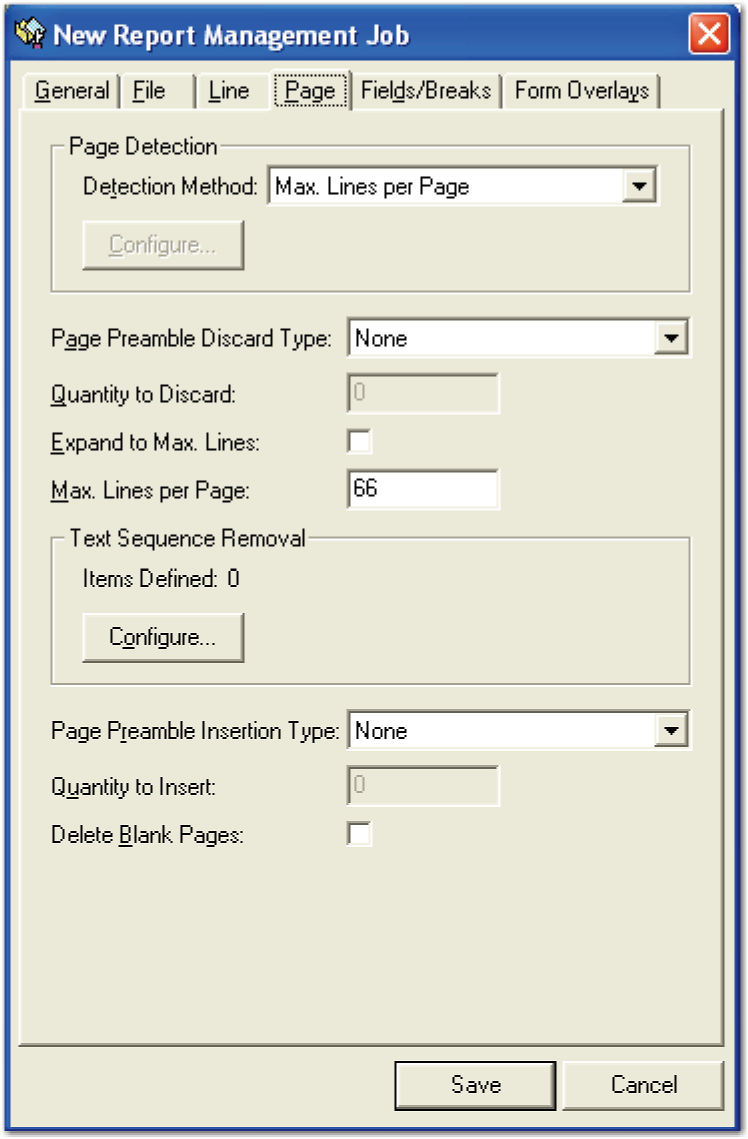
Prior to organizing lines into pages, you can specify to have characters removed and/or blank spaces inserted into each line of text.

Line Post-Processing

After lines are organized into pages, you can specify to have characters removed and/or blank spaces inserted into each line of text. You can also have the length of each line truncated (to remove extraneous data from the ends of lines).

Page Settings

Page settings allow you to configure the page detection method and related page preamble settings.



Report Management Job – Page Settings

Page Detection Method

This setting specifies the method used to organize lines into pages of text. For more information, see the section on **Page Detection Methods.**

Page Preamble Discard Type/ Quantity to Discard

Once a page has been assembled from lines, you can have lines, words, or characters stripped from the beginning of each page, prior to further processing. This is particularly useful in situations where the file has been pre-processed to insert markers to split pages, but those markers shouldn't be displayed in the resultant output.

Expand to Max Lines

If a page has fewer lines than the value specified in the **Max Lines per Page** setting, additional blank lines will be appended to the end of the page.

Max Lines per Page

This value is used in Expand to Max Lines as well as the **Max Lines per Page** Detection Method.

Text Sequence Removal

With the page of data assembled, the engine can search for and remove/replace textual values or regular expressions. This is useful for re-purposing confidential data for use by third parties. For more information, see the section on **Text sequence removal**.

Page Preamble Insert Type/Quantity to Insert

This value specifies the number of blank lines or characters (spaces) that should be inserted at the beginning of each page.

Delete Blank Pages

If this setting is enabled, pages containing only empty lines will be removed from the output.

Page Detection Methods

PaperVision Enterprise Report Management offers several methods to detect and organize lines into pages.

Max Lines per Page

This detection method simply places the specified number of lines into a page. Once the maximum value (Max. Lines per Page) has been reached, a new page is created.

Form Feed Characters

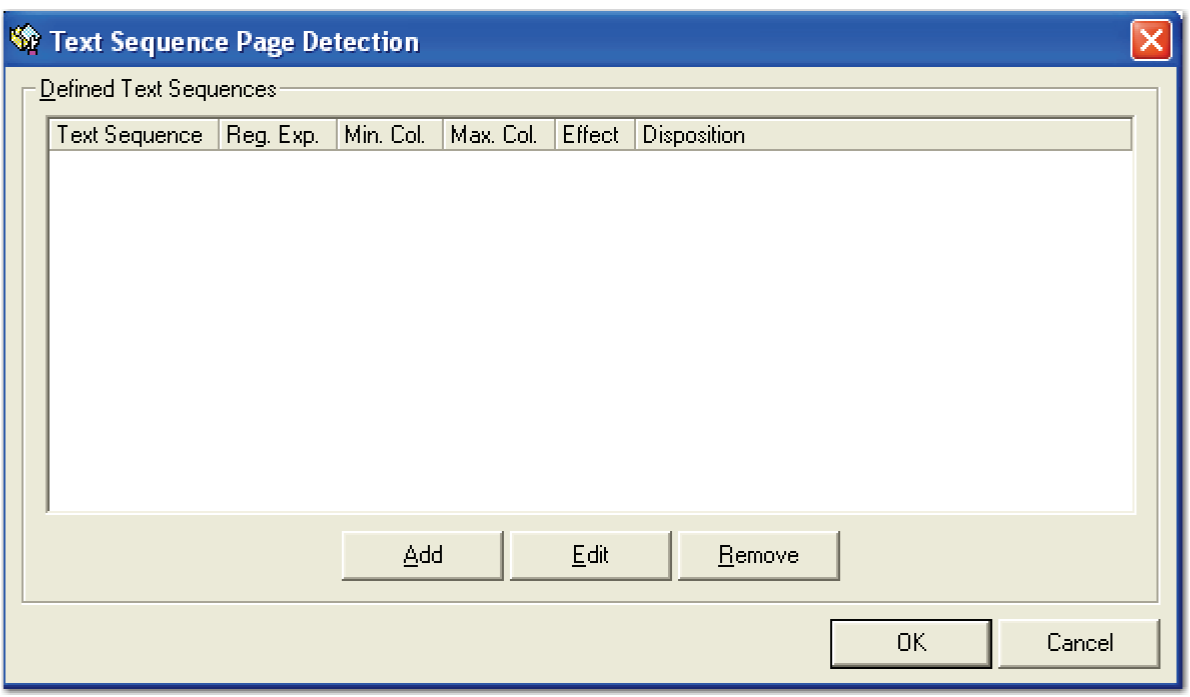
This is by far the simplest and fastest detection method. Many systems insert a form feed character (decimal 12) where new pages should begin. Use of this detection method will cause the system to identify the form feeds and break the pages appropriately.

Text Sequences

This method provides for the definition of one or more text sequences which, once located, designate a specified distance from the top or bottom of a page. You can add, edit, or remove individual sequences.

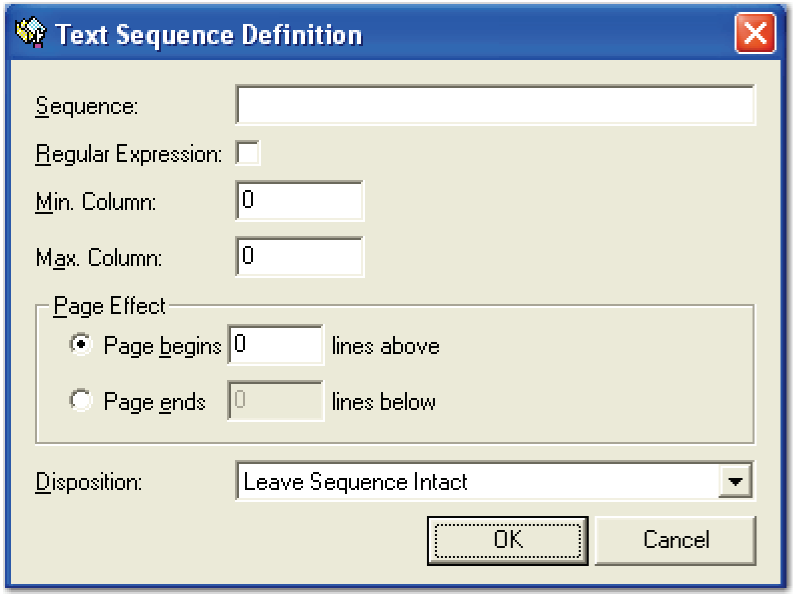
To add or edit text sequences:

1. In the **Page** tab, click the **Configure** button in the **Page Detection** section. The **Text Sequence Page Detection** dialog box appears.



Test Sequence Page Detection

2. Click **Add** or **Edit**. The **Text Sequence Definition** dialog box appears.



Text Sequence Definition

3. Configure the appropriate settings (described below), and then click **OK**.

- **Sequence:** Specifies the textual value or regular expression to be sought
- **Regular Expression**: Treats sequence as a regular expression (otherwise, sequence is searched for as a standard textual value)
- **Min. Column:** Specifies the minimum column that the sequence must fall within
- **Max. Column**: Specifies the maximum column that the sequence must fall within
- **Page Effect:** When the sequence is successfully located in the appropriate column(s), determines what effect it has

  Page Begins specifies that the page began X lines above the line where the sequence was found (zero indicates the located line is the top line).

  Page Ends specifies that the page will end X lines below the line where the sequence was found (zero indicates that located line is the last line).

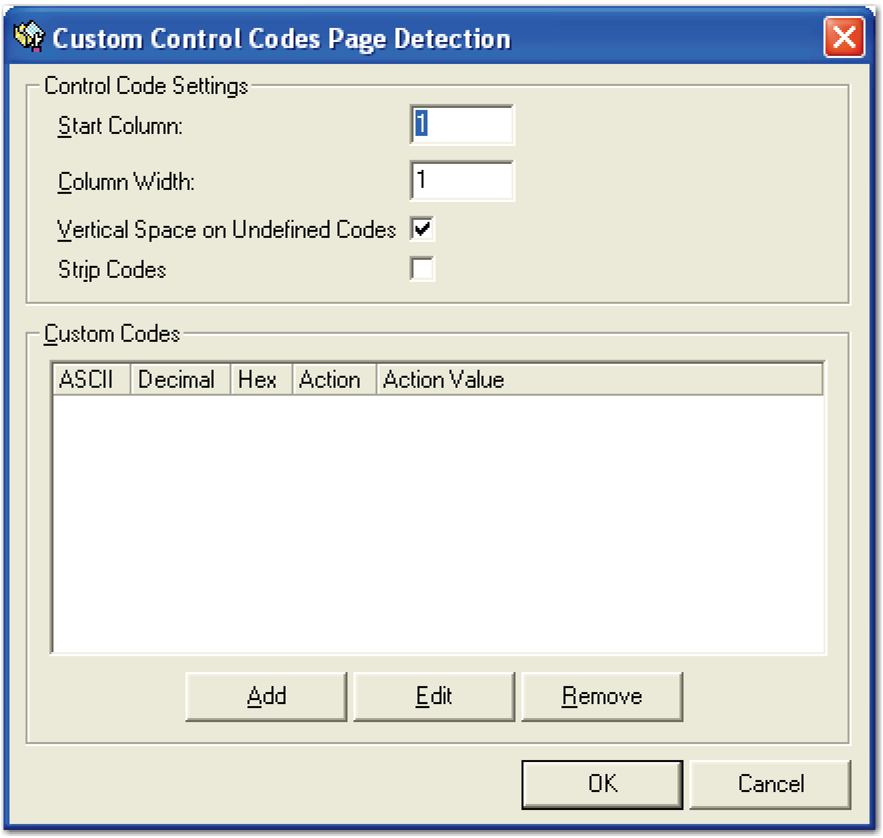
- **Disposition:** Indicates what should be done with the sequence after it has been identified

Custom Control Codes

This page detection method provides for the identification of a single character or a string of characters that are located within a defined column boundary. Not only can this method be used to separate pages, but it can also be used to format output (i.e. insert blank lines, place text on specific lines, etc.). You can add, edit, or remove individual custom codes.

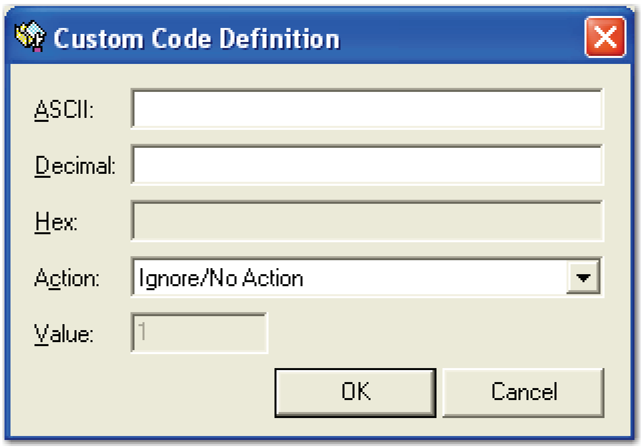
To add or edit custom codes:

1. In the **Page** tab, select the **Custom Control Codes** detection method.
2. Click the **Configure** button in the **Page Detection** section. The **Custom Control Codes Page Detection** dialog box appears.



Custom Control Codes Page Detection

3. Configure the appropriate **Control Code Settings** (described below).
    - **Start Column**: This value specifies the starting column position for each line that will be evaluated for custom codes.
    - **Column Width:** This value specifies the width (from the Start Column) that will be used to evaluate custom codes (e.g., if Start Column is 5 and Column Width is 5, then the engine will look for codes that fall within columns 5, 6, 7, 8 and 9).
    - **Vertical Space on Undefined Code**: If a code is encountered that has not been defined, a vertical space is inserted (carriage return/line feed).
    - **Strip Codes:** If enabled, the columns specified by Start Column and Column Width will be removed from the output.
4. Click **Add** or **Edit**. The **Custom Code Definition** dialog box appears.



Custom Code Definition

5. Configure the appropriate Custom Code Definition settings (described below), and then click **OK**.

    - **ASCII:** Specifies the ASCII character(s) of the custom code
    - **Decimal:** Specifies the Decimal value(s) of the character(s) of the custom code
    - **Hex:** Specifies the Hexadecimal value(s) of the character(s) of the custom code
    - **Action:** Indicates the action to be taken when the code is encountered

        Ignore/No Action: The code is defined, but no action is to be taken when encountered.

        Move to Line: Moves to the line number specified in the Value property and then outputs the remainder of the input line. If the specified line number is below the current line of the page, it simply moves to the specified line of the current page. However, if the specified line number is above the current line of the page, a new page is created and then it moves to the specified line of the new page to output.

        Vertical Space: Inserts the number of vertical spaces (carriage return/line feed), as specified by the Value property, before writing out the remainder of the input line

        End Page, Then Move to Line: Immediately writes out the remainder of the input line (to the current page), then creates a new page and moves to the line number specified by the **Value** property

    - **Value:** Specifies the value used for the particular Action taken

ASA/ANSI with Channel Commands

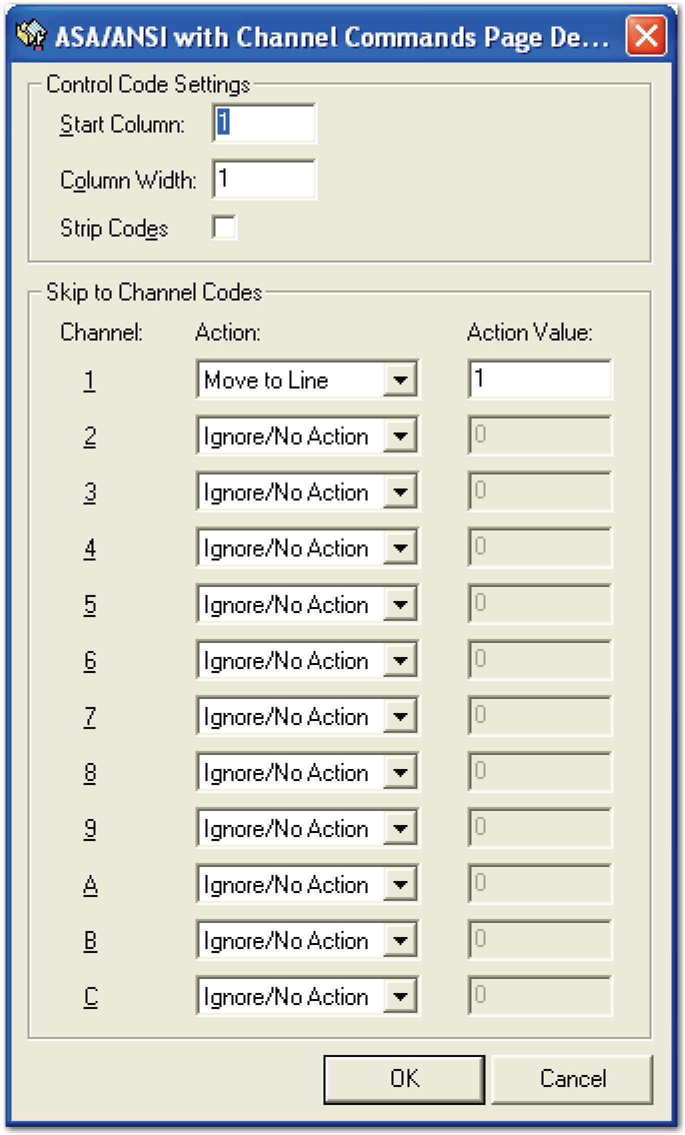
This page detection method provides a set of 16 codes used for line printers. Each code dictates the carriage control (line movement) PRIOR to writing to output the remainder of the line. When the remainder of the line is written, the carriage control remains on the current output line (does NOT automatically go to a new output line). The first four codes are static:

- + (plus sign): Does not move the carriage control. Simply outputs the remainder of the input line. Effectively combines the current line with the previous line.
- (blank space): Inserts a single vertical space (carriage return/line feed) and then outputs the remainder of the line.
- 0 (zero): Inserts two vertical spaces (carriage returns/line feeds) and then outputs the remainder of the line.
- - (minus sign): Inserts three vertical spaces (carriage returns/line feeds) and then outputs the remainder of the line.

The remaining twelve codes are dynamic and are known as "channels". The action taken for each of the remaining twelve codes can be defined. Channel 1 is the most common, and by standards is generally used to indicate Top of Form.

To configure ASA/ANSI Channel Commands:

1. In the **Page** tab, select the **ASA/ANSI with Channel Commands** detection method.
2. Click the **Configure** button in the **Page Detection** section. The **ASA/ANSI with Channel Commands** dialog box appears.



ASA/ANSI with Channel Commands Page Detection

3. Configure the appropriate settings (described below), and then click **OK**.

- **Start Column:** This value specifies the starting column position for each line that will be evaluated for channel codes. The ASA/ANSI reports generally use a Start Column of 1.
- **Column Width:** This value specifies the width (from the Start Column) that will be used to evaluate channel codes. For instance, if Start Column is 5 and Column Width is 5, then the engine will look for codes that fall within columns 5, 6, 7, 8 and 9. The ASA/ANSI reports generally use a Column Width of 1.
- **Strip Codes:** If enabled, the columns specified by Start Column and Column Width will be removed from the output.
- **Channel 1 to C:** These selections specify the channel command that will appear in the specified columns.
- **Action:** Indicates the action to be taken when the code is encountered:

  Ignore/No Action: The code is ignored, and no action is to be taken when encountered. The remainder is simply tagged onto the previous line.

  Move to Line: This action moves to the line number specified in the Action Value property and then outputs the remainder of the input line. If the specified line number is below the current line of the page, it simply moves to the specified line of the current page. However, if the specified line number is above the current line of the page, a new page is created and then it moves to the specified line of the new page to output.

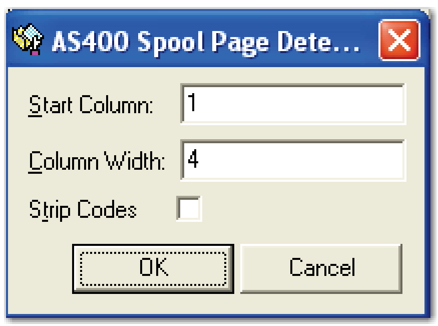
  Vertical Space: This action inserts the number of vertical spaces (carriage return/line feed), as specified by the Action Value property, before writing out the remainder of the input line.

- **Action Value:** This value is used for the selected action.

AS400 Spool (3/1 Digit Commands)

This page detection method provides a means of interpreting standard control codes that appear in AS400 spool files. The common theme behind this type of control scenario is that a 3-digit number, a 1-digit number, or nothing is located within the code columns. The command is carried out, inserting the appropriate number of vertical spaces (carriage returns/line feeds), and then the remainder of the input line is appended. When the remainder of the line is written, the carriage control remains on the current output line (does not automatically go to a new output line).

- (blank space): A single vertical space (carriage return/line feed) is inserted and then outputs the remainder of the input line.
- 1-digit number: The specified number of vertical spaces (carriage returns/line feeds) is inserted and then outputs the remainder of the input line.
- 3-digit number: A 3-digit number advances to the specified line number on the page and then outputs the remainder of the input line. If the specified line number is less than the current line number of the current page, a new page is created and the engine advances to the specified line number before outputting the remainder of the input line.



AS400 Spool Page Detection

Start Column

This value specifies the starting column position for each line that will be evaluated for channel codes. AS400 spool files generally use a Start Column of 1.

Column Width

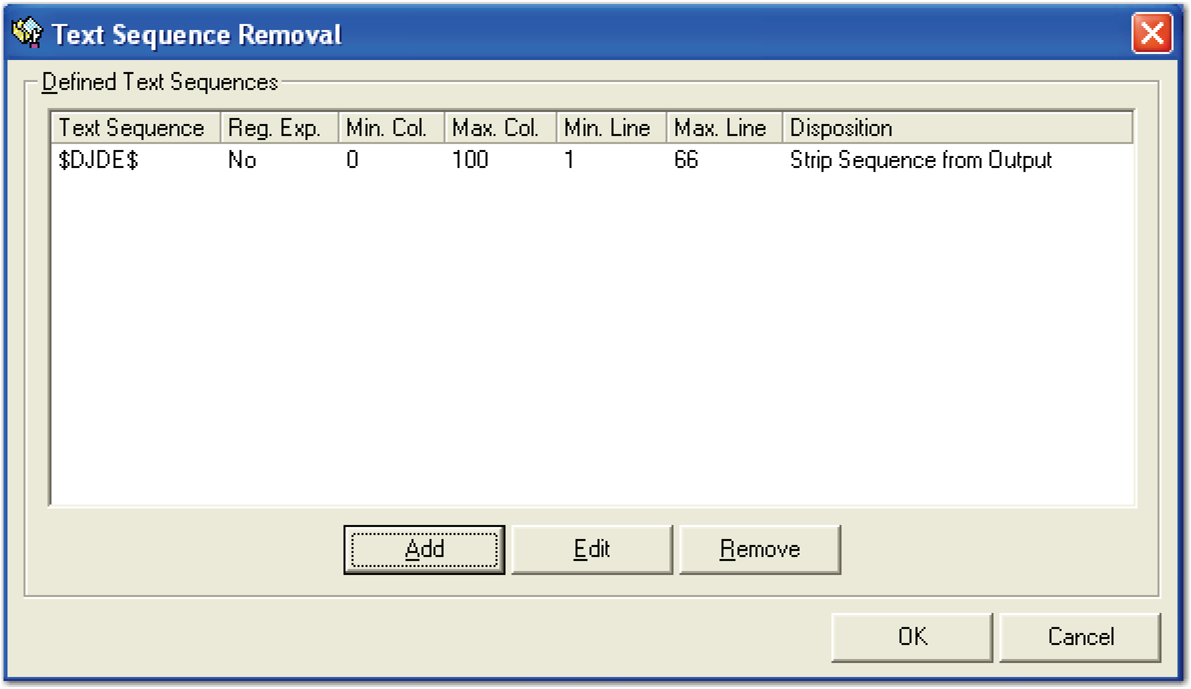
This value specifies the width (from the Start Column) that will be used to evaluate spool codes. For instance, if Start Column is 5 and Column Width is 5, then the engine will look for codes that fall within columns 5, 6, 7, 8 and 9. AS400 spool files generally use a Column Width of 4.

Strip Codes

If enabled, the columns specified by Start Column and Column Width are removed from the output.

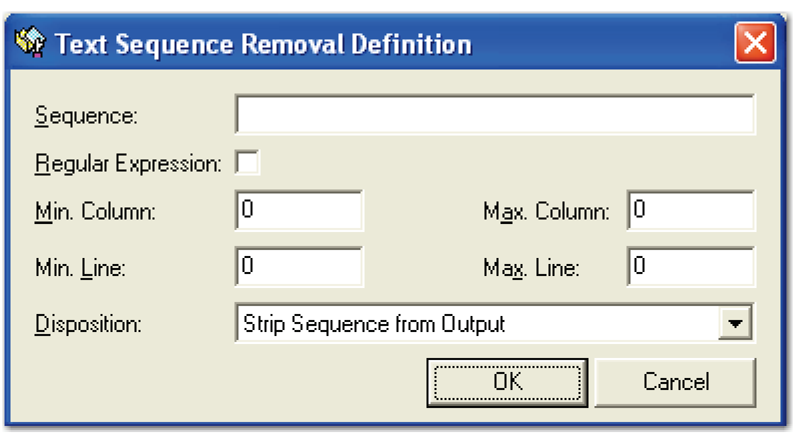
Text Sequence Removal (Page)

Text Sequence Removal provides a means to search for and remove/replace textual values or regular expressions within a page's data. This is useful for re-purposing confidential data for use by third parties. For additional information, see **Appendix F – Regular Expressions**.



Text Sequence Removal

You can add, edit, or remove individual sequences. Adding or editing sequences is accomplished by selecting **Add** or **Edit**. The **Text Sequence Removal Definition** dialog box appears.



Text Sequence Removal Definition

Sequence

This setting specifies the textual value or regular expression to be sought.

Regular Expression

This setting specifies whether or not to treat the sequence as a regular expression. Otherwise, the sequence is searched for as a standard textual value.

Min. Column

This value specifies the minimum column that the sequence must fall within.

Max. Column

This value specifies the maximum column that the sequence must fall within.

Min. Line

This value specifies the minimum line on the page that the sequence must fall within.

Max. Line

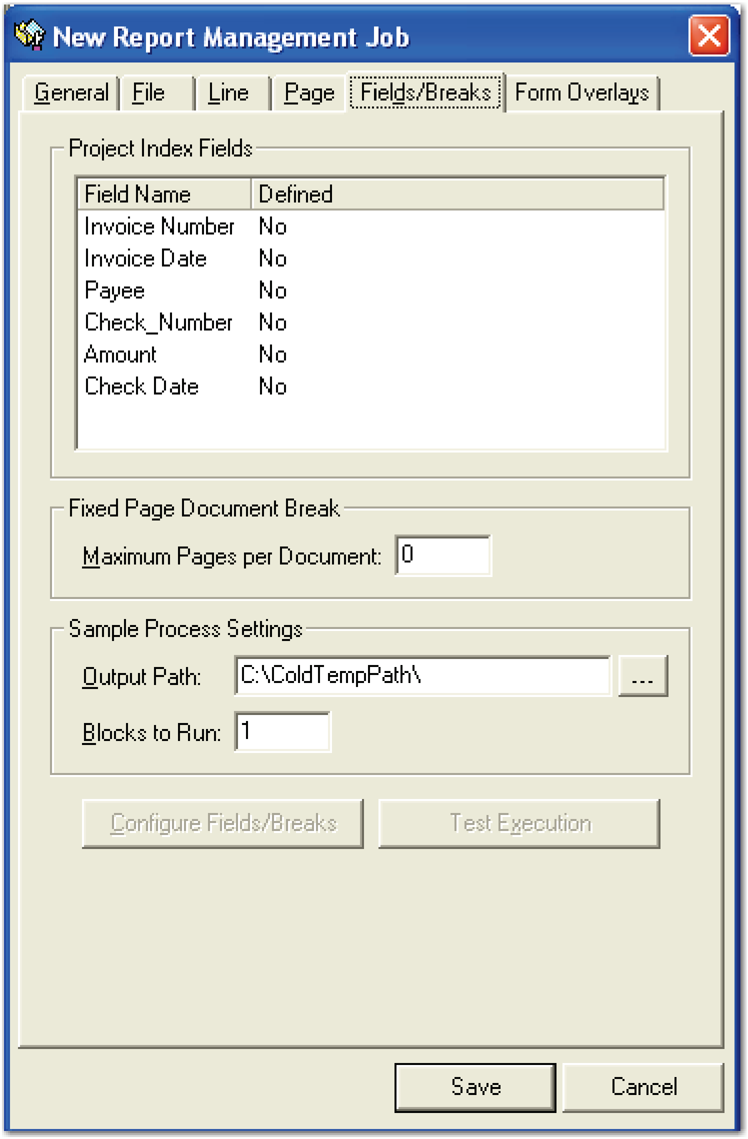
This value specifies the maximum line on the page that the sequence must fall within.

Disposition

The disposition indicates what should be done with the sequence after it has been identified.

Fields/Breaks Settings

Fields/Breaks settings allow you to view the index fields that have been defined for extraction. Additionally, you can assign a maximum number of pages per document and configure the sample process settings.



Report Management Job – Fields/Breaks

Project Index Fields

This list provides a quick view of the project index fields that have been defined for extraction.

Maximum Pages per Document

This value specifies that a new document will automatically be started when the document page count reaches this number. A value of zero disables this feature.

Output Path

Performing a Configure Fields/Breaks or Test Execution runs the parser as it will run when automated. In other words, actual file sets are created. This option specifies the temporary location where the file set will be placed while viewing the results. The file set(s) is removed automatically when you close the resulting viewer.

Blocks to Run

This value specifies the number of blocks (whose Block Size was specified in the File tab), that will be run for the Configure Fields/Breaks or Test Execution operation. This allows you to limit how much data is run through the parser prior to displaying the results. It is useful when configuring a job for large reports, as it is seldom necessary to parse an entire report to configure the job. Setting a value of zero will run all of the files' data through the parser.

Configure Fields/Breaks

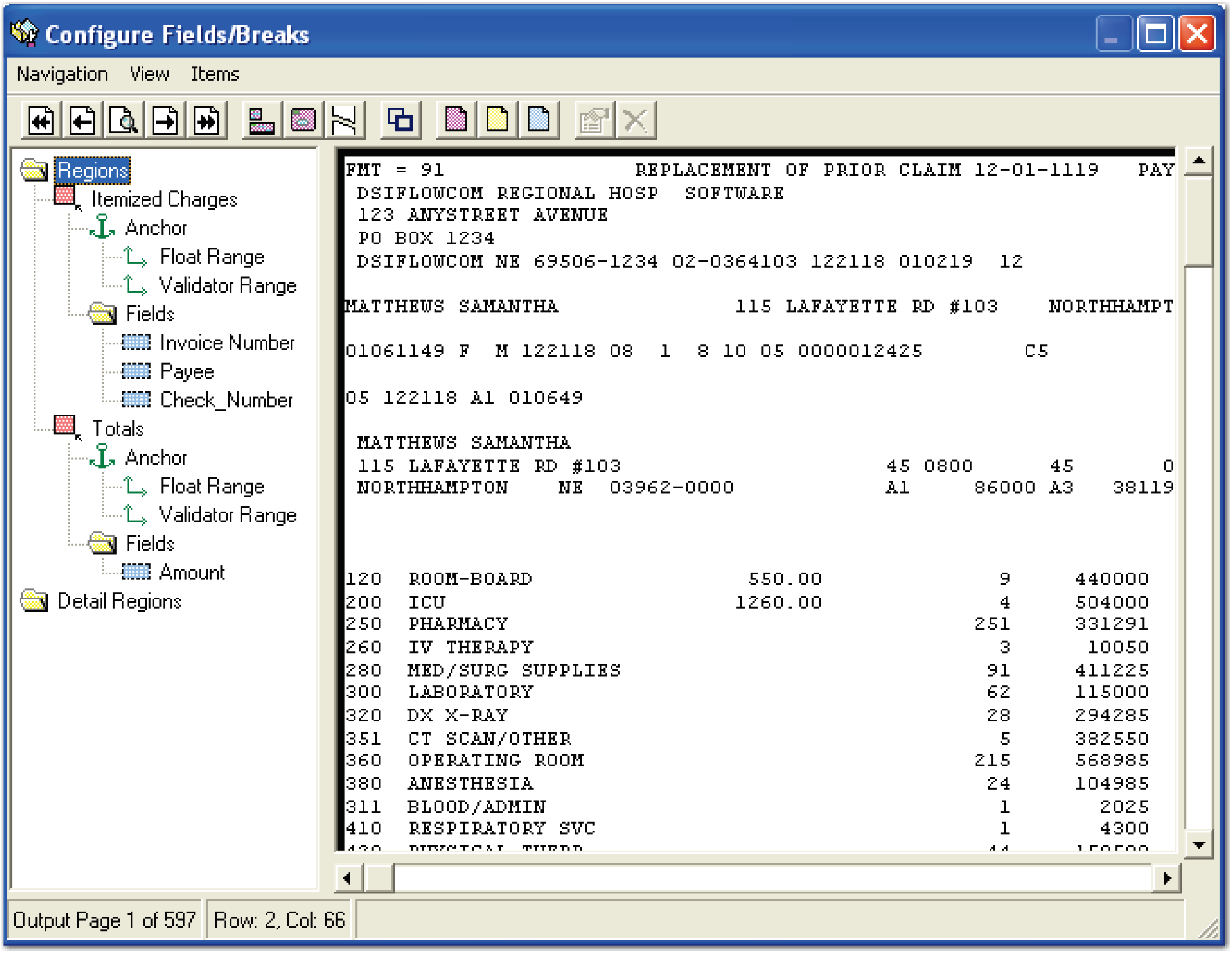
This operation allows you to define regions, anchors, and fields.

Test Execution

This operation allows you to execute real-world test of the job configuration, displaying the resulting output, complete with document index values.

Configuring Fields and Breaks

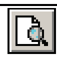
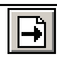
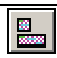
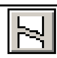
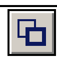
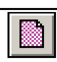
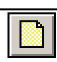
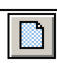
PaperVision Enterprise Report Management provides a graphical configuration of document index fields and breaks. When the **Configure Fields/Breaks** button is selected, the engine parses the sample document(s) into pages. These pages are then displayed in the **Configure Fields/Breaks** screen.



Configure Fields/Breaks

You can perform the various functions needed to configure fields and breaks by clicking the appropriate toolbar buttons, selecting the corresponding menu items, or using hot keys.

Configure Fields/Breaks Operations

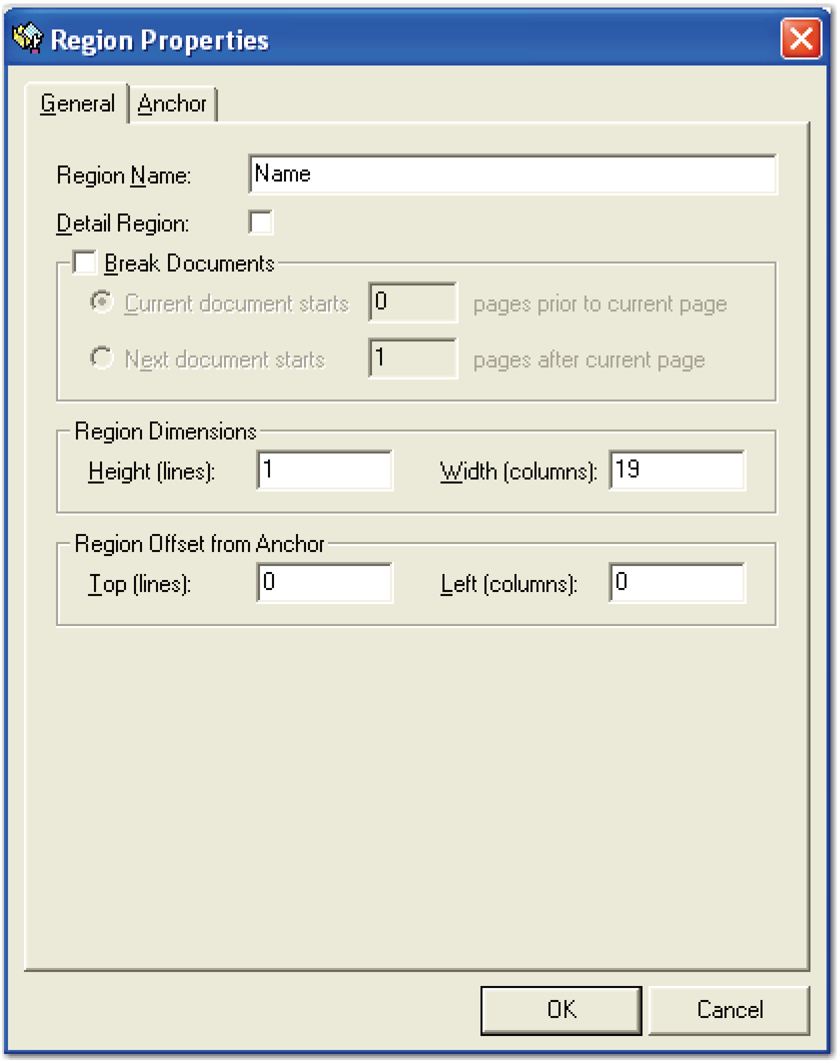
Icon	Hot Key	Menu > Option	Description
	Home	Navigation > First Page	Displays the first page of the processed data
	Page Up	Navigation > Previous Page	Displays the previous page of the processed data
	F3	Navigation > Find Page	Locates a specific page number of the processed data
	Page Down	Navigation > Next Page	Displays the next page of the processed data
	End	Navigation > Last Page	Displays the last page of the processed data
	A	View > Show All	Displays all regions, anchors and fields
	C	View > Show Region Components	Displays all components (anchor, ranges, and fields) for the currently selected region
	B	View > Show Document Breaks	Displays all break regions and document break fields
	E	View > Enable/Disable Enlarged Frames	Greatly increases the size of the frame around displayed items to make it easier to grab with the mouse
	R	Items > New Region	Starts the mode necessary to draw a new region
	D	Items > New Detail Region	Starts the mode necessary to draw a new detail region
	F	Items > New Field	Starts the mode necessary to draw a new field in the currently selected region
	P	Items > Properties	Displays the properties for the currently selected item
	Delete	Items > Delete	Deletes the currently selected region or field
N/A	Esc	Navigation > Close	Closes the Configure Fields/Breaks screen

Configuring Regions

You can configure regions that are located once on a page or that appear repeatedly on multiple pages (detail regions).

To draw a region:

1. Click the **Region** icon (or the **Detail Region** icon).
2. Drag the cursor around the appropriate area on the page, and the **Region Properties** dialog box appears.



Region Properties – General

Region Name

The name of the region is used only for your reference.

Detail Region

This setting specifies whether or not the region is a detail region. Detail regions are repeatedly located in the same area on a page (for extracting detail data), whereas non-detail regions are located only once on a page.

Break Documents

If this setting is enabled, a document break will be placed if the region is successfully located on the page. Document breaks can either occur on the current page (**Current document starts 0 pages prior to current page**), prior to the current page, or after the current page.

Region Dimensions

These values specify the height (in lines) and width (in columns) of the region on the page. The region dimensions can be configured in this screen or drawn graphically using the mouse.

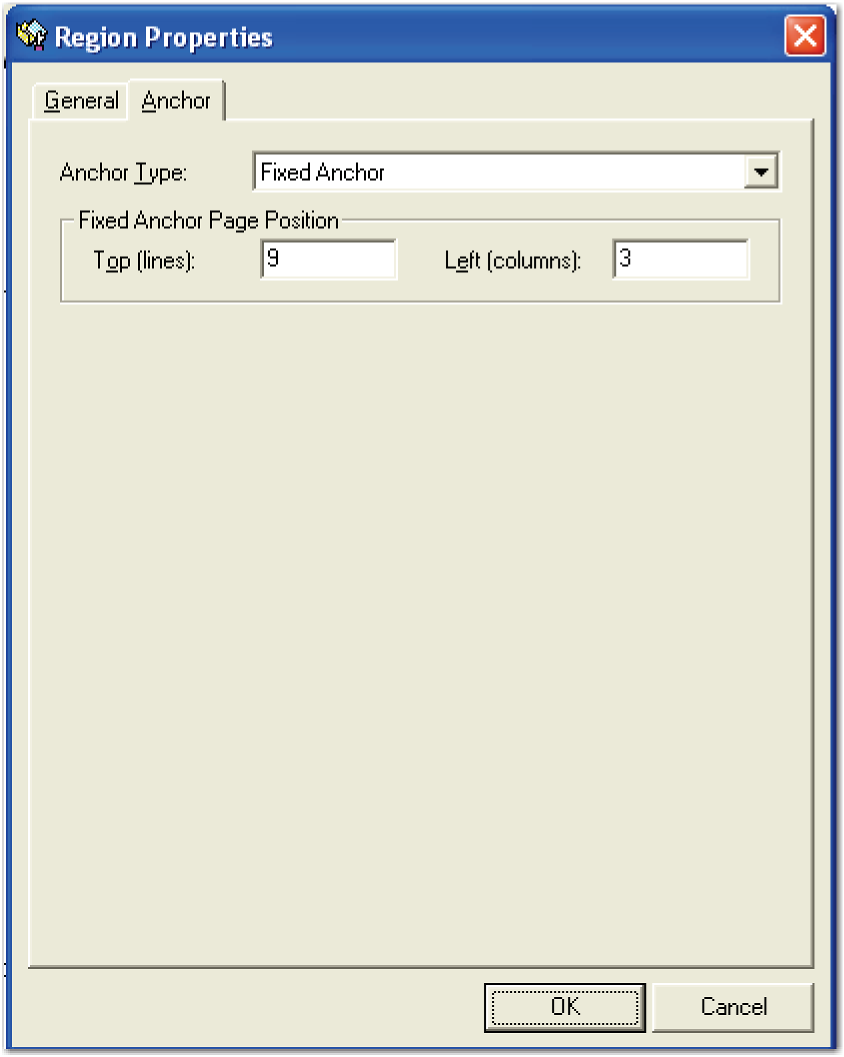
> **Note**:
>
> Regions can fall outside the boundaries of some pages.

Region Offset from Anchor

These values specify the offset (distance from the top left corner of the anchor) that the top left corner of the region is to be created once an anchor is located.

Anchor Properties

Each region's Anchor Properties allow you to specify the anchor type (fixed or floating) and its corresponding settings.



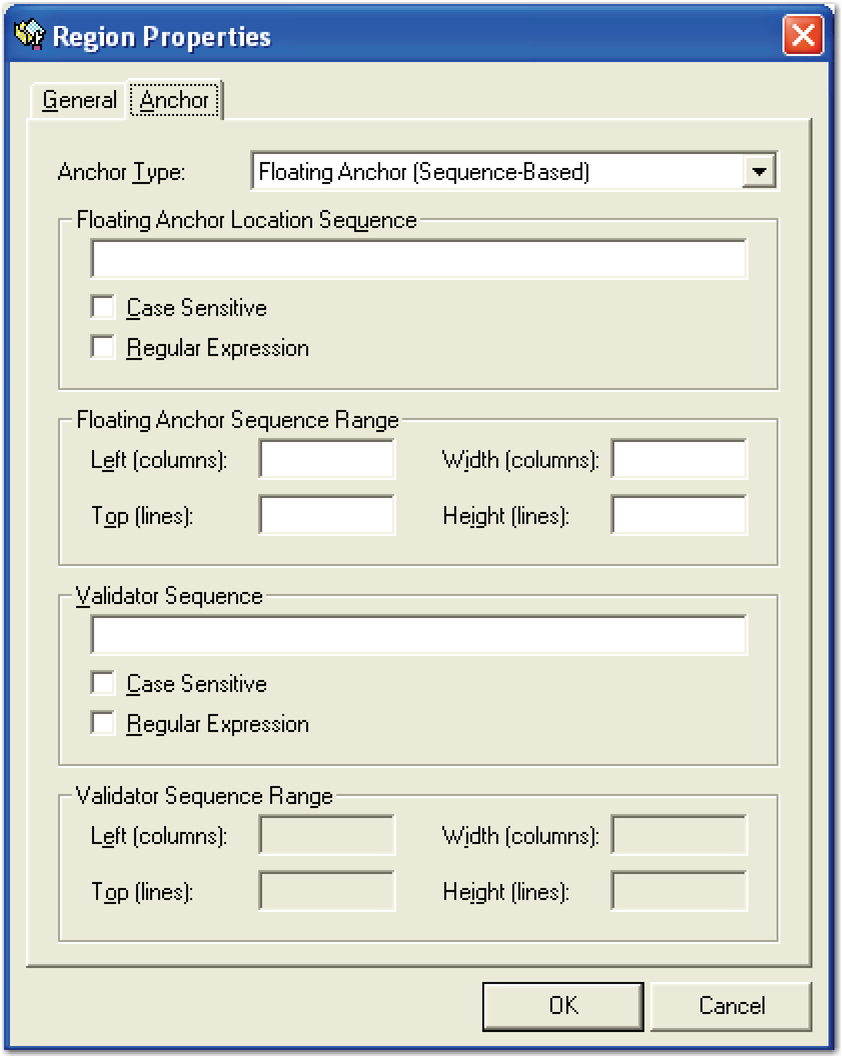
Region Properties – Fixed Anchor

Anchor Type

This setting specifies whether the anchor is fixed (a specific location from the top left corner of the page) or floating (located by finding a textual sequence on the page).

Fixed Anchor Page Position

These values specify the anchor location from the top left corner of the page. The position can be configured explicitly in this screen or drawn graphically using the mouse.



Region Properties – Floating Anchor

Floating Anchor Location Sequence

For floating anchor types, you can specify the textual value or regular expression to be sought in order to locate the anchor.

Case Sensitive

This setting specifies whether the sequence is to be treated as case-sensitive.

Regular Expression

If this setting is enabled, the sequence is treated as a regular expression. Otherwise, the sequence is searched for as a standard textual value.

Floating Anchor Sequence Range

These values specify the left, top, width, and height of the column/line range that the anchor sequence must be located within. The range can be configured explicitly in this screen or drawn graphically using the mouse.

Validator Sequence

This setting specifies the textual value or regular expression to be sought in order to validate the anchor on a page. Once the engine thinks it has an anchor, it will attempt to verify that the Validator Sequence can be located.

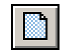
Validator Sequence Range

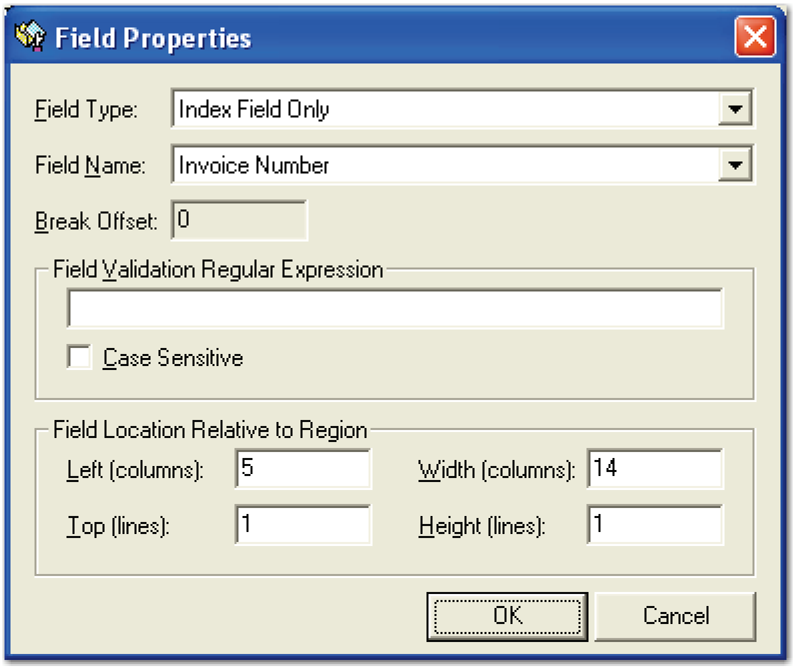
These values specify the left, top, width, and height of the column/line range that the Validator Sequence must be located within. The range can be configured explicitly in this screen or drawn graphically using the mouse.

Configuring Fields

You can configure individual fields within a region and define them as index fields, document breaks, or index fields and document breaks.

To draw a field within a region:

1. Select the appropriate region on the page, and then click the **Field**  icon.
2. Drag the cursor around the appropriate area on the page, and then the **Field Properties** dialog box appears.



Field Properties

Field Type

The following types of fields are available for selection:

- **Index Field and Document Break**: Saves the data within the field for document retrieval and when the field data changes, automatically marks a new document
- **Index Field Only**: Saves the data within the field for document retrieval
- **Document Break Only**: Checks for changing values and, when the values change, automatically marks a new document

Field Name

For index fields, the field name corresponds to the name of the index field that will be populated with the located values.

Break Offset

For document break fields, this values specifies the number of pages after the current page that will be appended into the current document before a new document is started. A value of zero indicates that the current page is the last page of the document.

Field Validation Regular Expression

Once the field data has been extracted, it can be compared with this sequence to verify that the located value is valid.

Case Sensitive

If this setting is enabled, the regular expression is to be treated as case-sensitive.

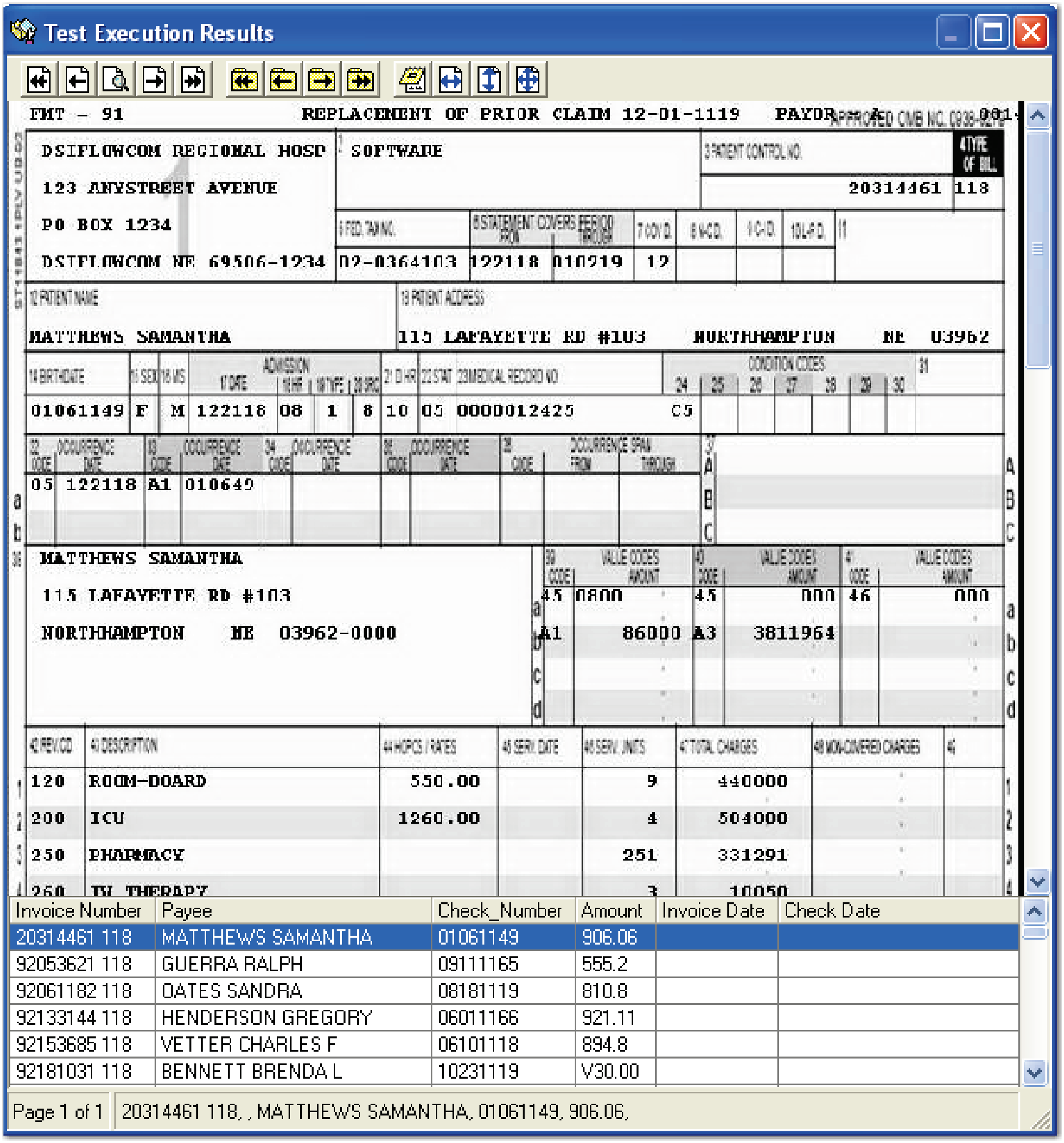
Field Location Relative to Region

These values specify the left, top, width, and height of the column/line range that the field value is extracted from. The location can be configured explicitly in this screen or drawn graphically using the mouse. If a field is located on multiple lines, the lines are combined with spaces between their values.

Test Execution

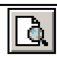
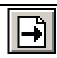
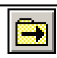
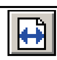
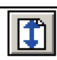
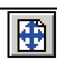
The Test Execution operation performs a real-world test of the job configuration, displaying the resulting output, complete with document index values.

> **Note**:
>
> Only the first file set's documents will appear (up to 20,000 documents from that file set).



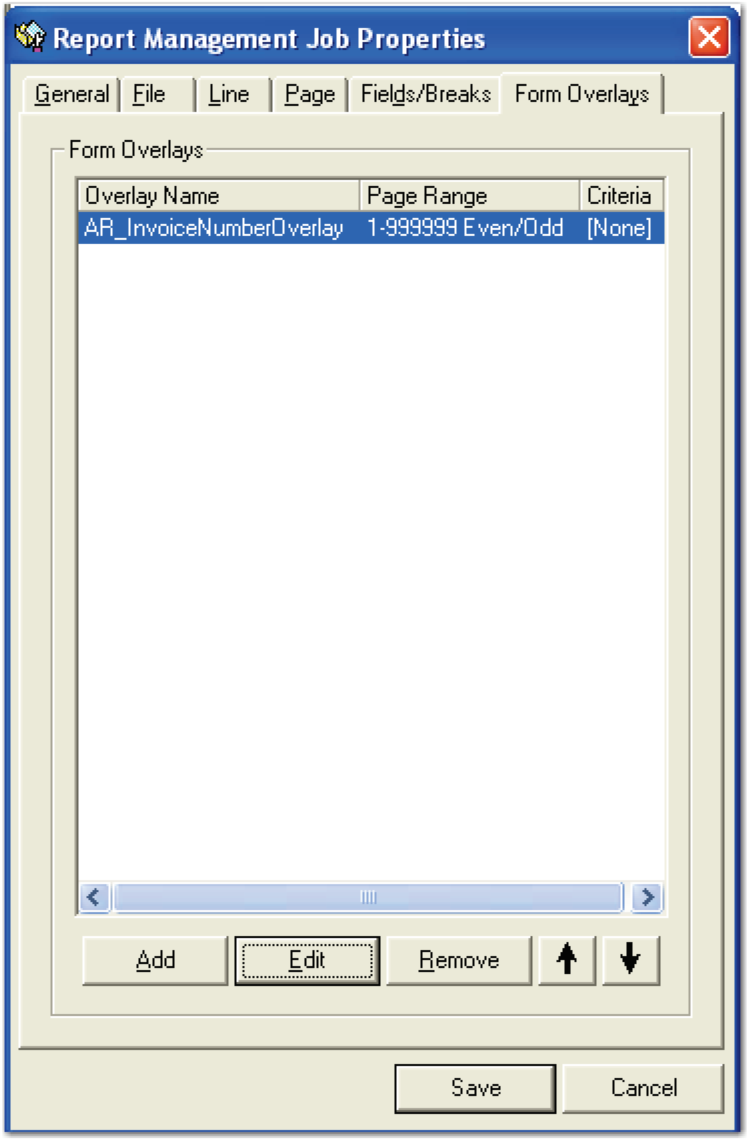
Test Execution Results

You can navigate through the documents and pages by clicking the appropriate toolbar buttons, selecting the corresponding menu items, or using hotkeys. Specific documents can also be selected by double-clicking on the document in the document list.

Test Execution Results Operations		
Icon	**Hot Key**	**Description**
	Home	Displays the first page of the current document
	Page Up	Displays the previous page of the current document
	F3	Locates a specific page number of the current document
	Page Down	Displays the next page of the current document
	End	Displays the last page of the current document
	Ctrl + Home	Displays the first page of the first document
	Ctrl + Page Up	Displays the first page of the previous document
	Ctrl + Page Down	Displays the first page of the next document
	Ctrl + End	Displays the first page of the last document
	O	Shows (or hides) the overlay for the current page
	W	Scales the overlay image to the width of the screen
	H	Scales the overlay image to the height of the screen
	Space	Scales the overlay image to fit on the screen

Form Overlays

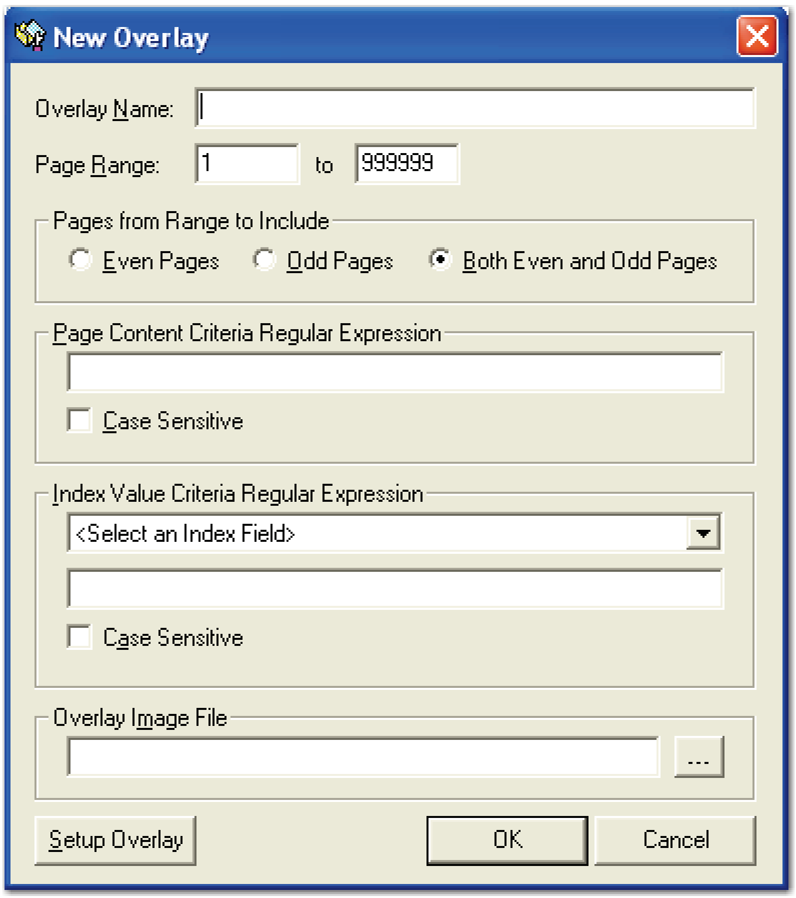
Form Overlays' settings allow you to add, edit, remove, and reorder form overlays for the report management job.



Report Management Job – Form Overlays

Configuring Form Overlays

PaperVision Enterprise Report Management includes the ability to perform form overlays, which overlays the parsed page text onto a blank form, creating an image that reproduces the original printed page. An unlimited number of overlay forms are supported per report management job. Each form overlay has a set of rules that are applied to it. In order for a form to be selected for a page, all of the rules must be met. When a page of a document is retrieved, PaperVision Enterprise will evaluate all of the rules pertaining to each form overlay (in the order that they were listed), until a form overlay is identified whose rules are met by that page. This is an important concept to keep in mind when configuring jobs that contain a large number of overlays as it increases system responsiveness to have the most commonly used forms listed first.



New Overlay

Overlay Name

This setting specifies the name of the overlay file.

Page Range

You can specify the range of pages that the overlay form can be applied to.

Pages from Range to Include

You can apply the form only to even, odd, or all pages within the specified **Page Range.**

Page Content Criteria Regular Expression

If provided, the system evaluates whether this regular expression can be located within the contents of the page's text.

Index Value Criteria Regular Expression

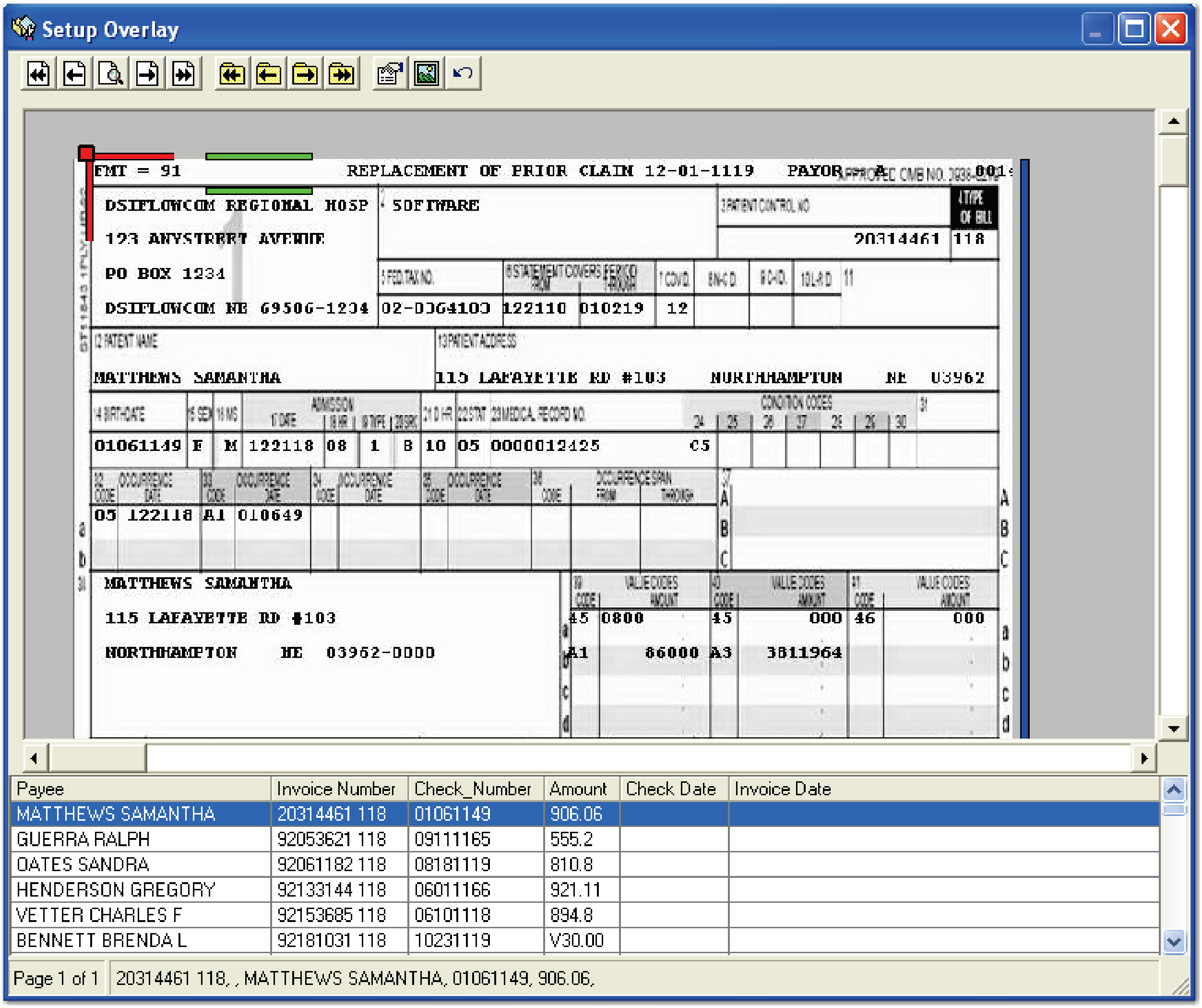
If provided, the system evaluates whether this regular expression can be located within the contents of the specified index field value.

Overlay Image File

You can specify the overlay form file over which the page's textual content will be overlaid. TIF, JPG, GIF, and PNG image file types are supported.

Setup Overlay

This operation displays the Setup Overlay screen to configure the rendering of the form overlay.

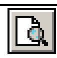
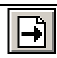
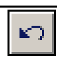


Setup Overlay

While PaperVision Enterprise Report Management allows you to explicitly set all of the values necessary to generate a well-aligned form overlay, it also offers the ability to graphically manipulate those settings, providing you immediate feedback to your changes. You can graphically move the position of the overlay text on the image (altering the text left and top values) by selecting the red alignment tool in the top left corner of the text with your mouse. You can adjust the text line height by using your mouse to increase or decrease the distance between the two green line height adjustment tools located to right of the text alignment tool. You can resize the blank form's width and height by moving the blue image width and height adjustment tools located to the right and bottom of the image.

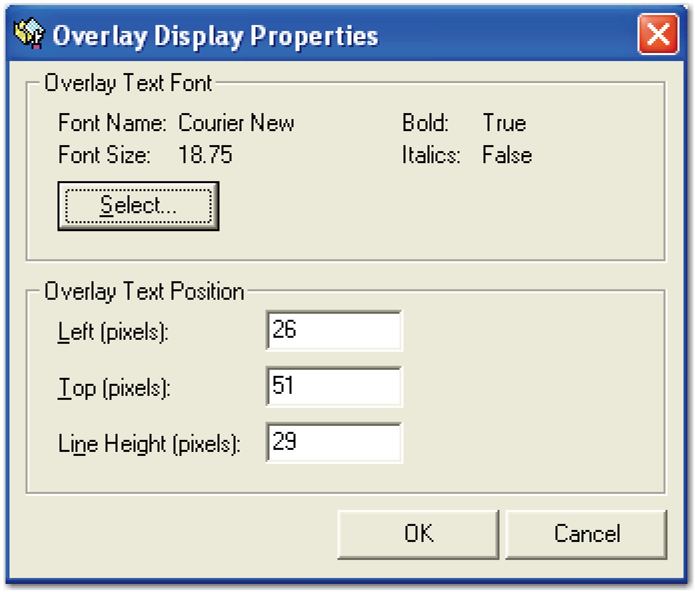
You can navigate through the documents and pages by clicking the appropriate toolbar buttons, selecting the corresponding menu items, or using hot keys. You can also select specific documents by double-clicking on the document in the list.

Setup Overlay Operations

Icon	Hot Key	Description
	Home	Displays the first page of the current document
	Page Up	Displays the previous page of the current document
	F3	Locates a specific page number of the current document
	Page Down	Displays the next page of the current document
	End	Displays the last page of the current document
	Ctrl + Home	Displays the first page of the first document
	Ctrl + Page Up	Displays the first page of the previous document
	Ctrl + Page Down	Displays the first page of the next document
	Ctrl + End	Displays the first page of the last document
	T	Displays the Overlay Text Display Properties dialog box
	F	Displays the Overlay Form Modification dialog box
	R	Reverts the displayed form back to the original form (as it was when you first selected the Setup Overlay button)

Modifying Overlay Text Display Properties

Click the **Overlay Text Properties**  icon to modify the overlay's font appearance and positioning within the form.



Overlay Text Display Properties

Overlay Text Font

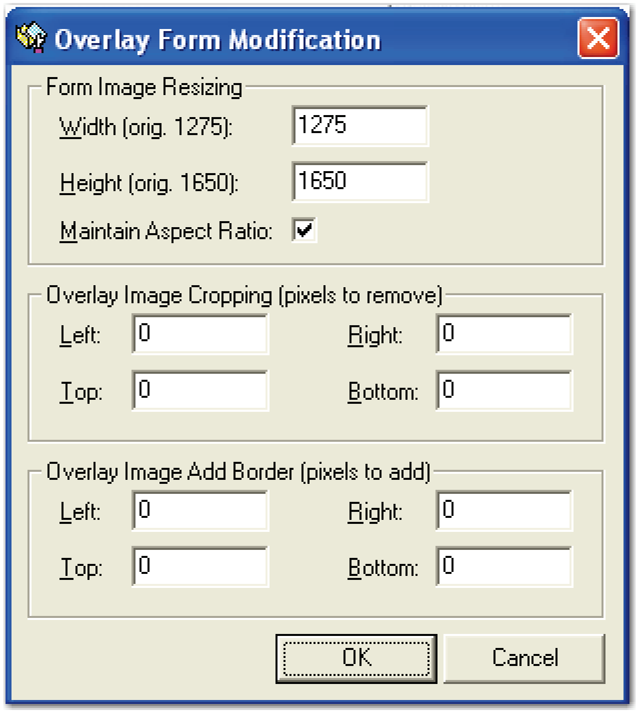
This font is used to render the text onto the blank overlay form.

Overlay Text Position

These values specify the location where the overlay text is rendered onto the blank form and the height of each line of text (in pixels).

Modifying the Overlay Form

Click the **Overlay Form Modification** icon to modify the size of the form image or to add/remove pixels to/from the image.



Overlay Form Modification

Width

Altering this value causes the blank form's image width to be stretched or shrunk.

Height

Altering this value causes the blank form's image height to be stretched or shrunk.

Overlay Image Cropping

These values specify the number of pixels to remove from the edges of the blank form's image.

Overlay Image Add Border

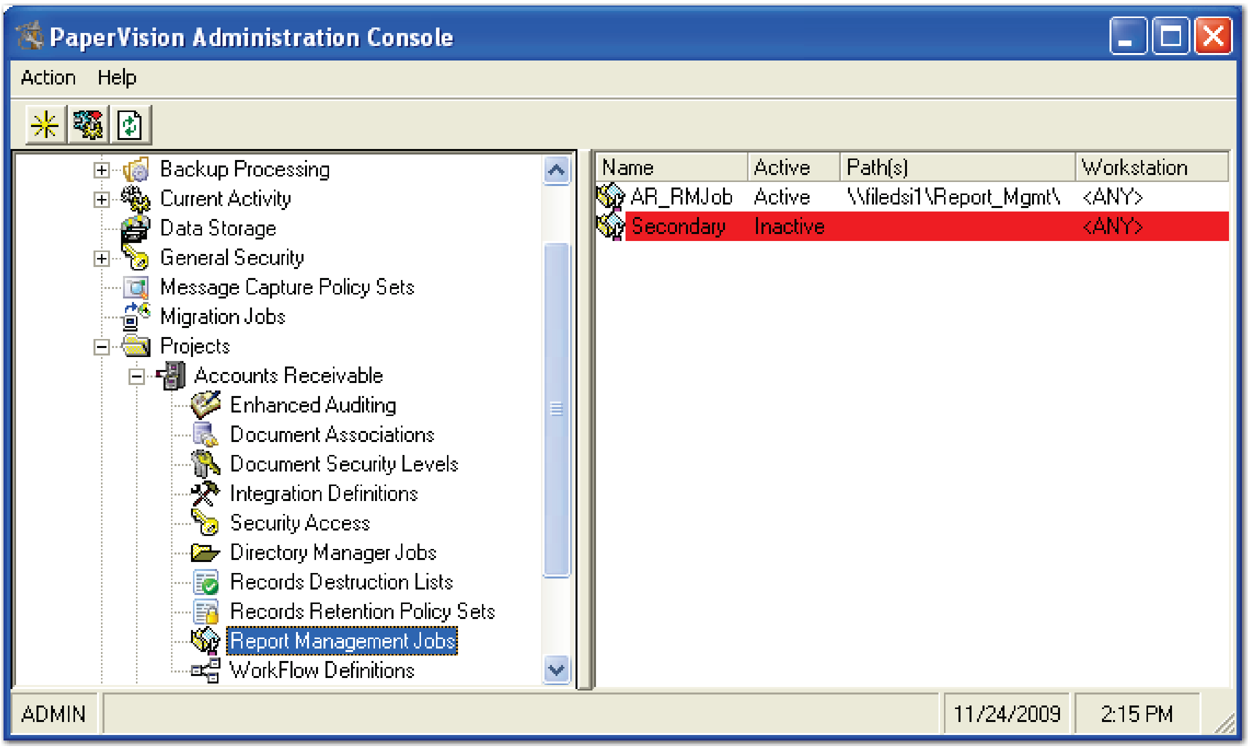
These values specify the number of white pixels to add to each edge of the blank form's image.

Configuring Report Management Jobs

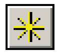
You can create, edit, deactivate, delete, export, and import report management jobs.

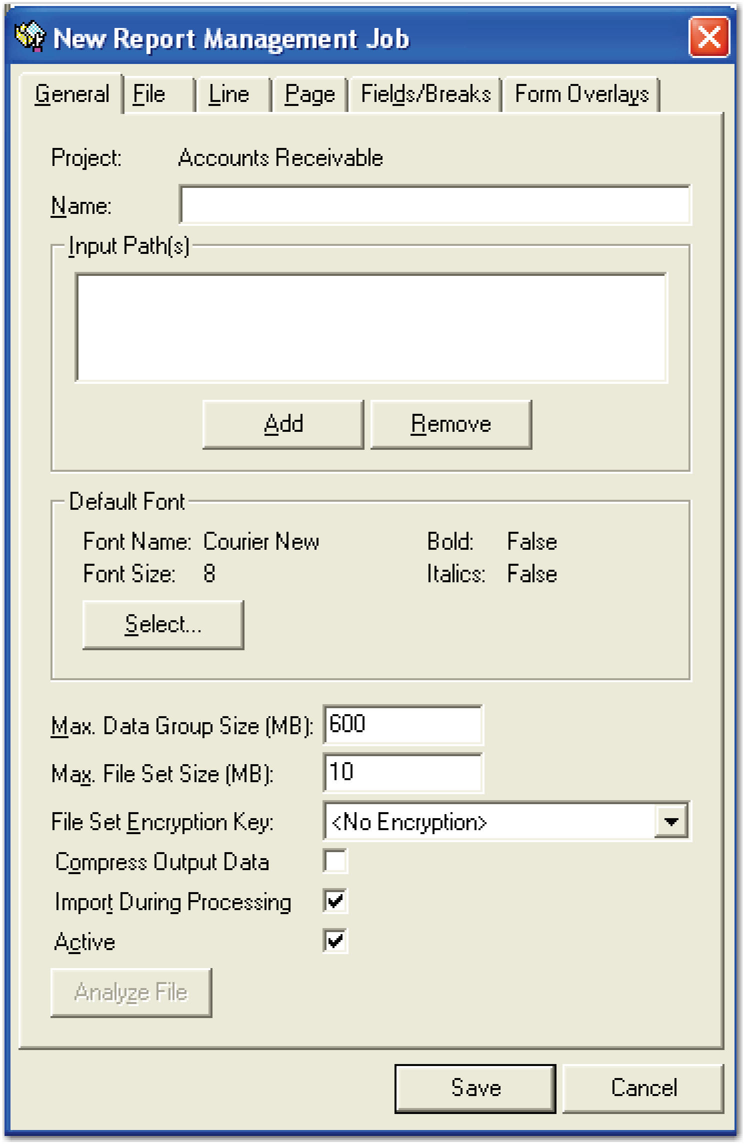
To create a new report management job:

1. Expand the appropriate project, and then select **Report Management Jobs**. The **Report Management Job** screen appears.



Report Management Jobs

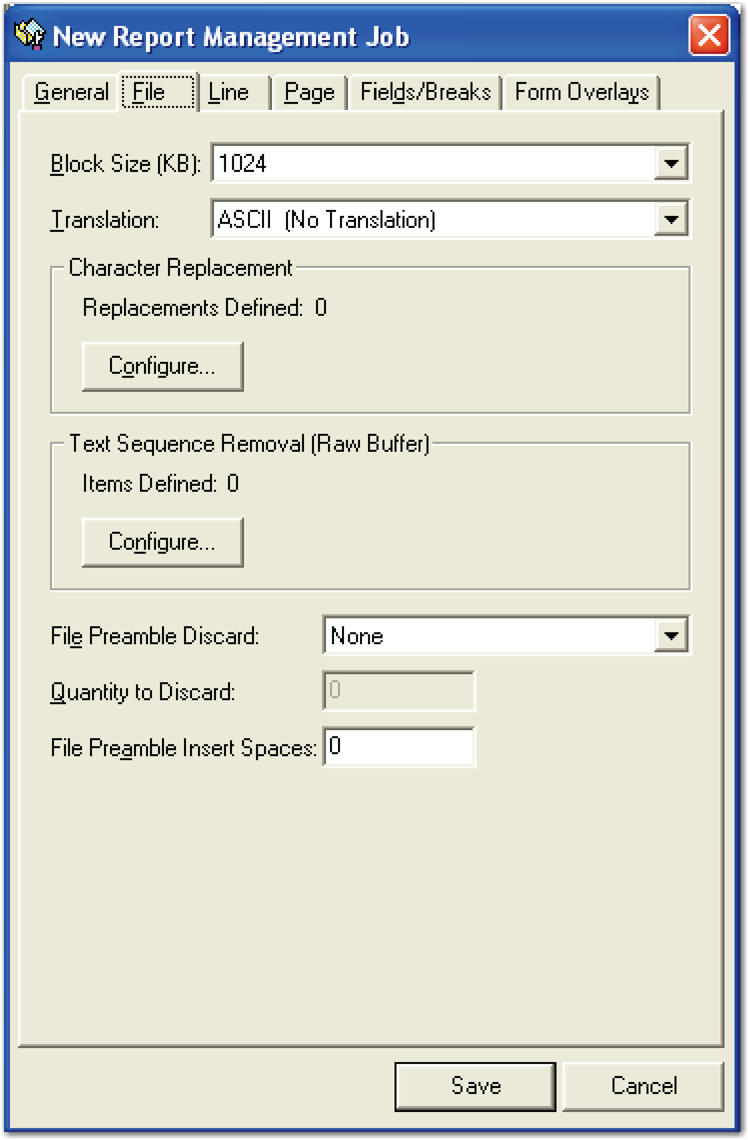
2. Click the **New**  icon. The **New Report Management Job –General** dialog box appears.



New Report Management Job – General Settings

3. Enter a name for the new job.
4. Select the **Input Path(s)** where the data files are located for the job.
5. Alter any general settings as desired. For descriptions of each setting, see the section on **General settings.**

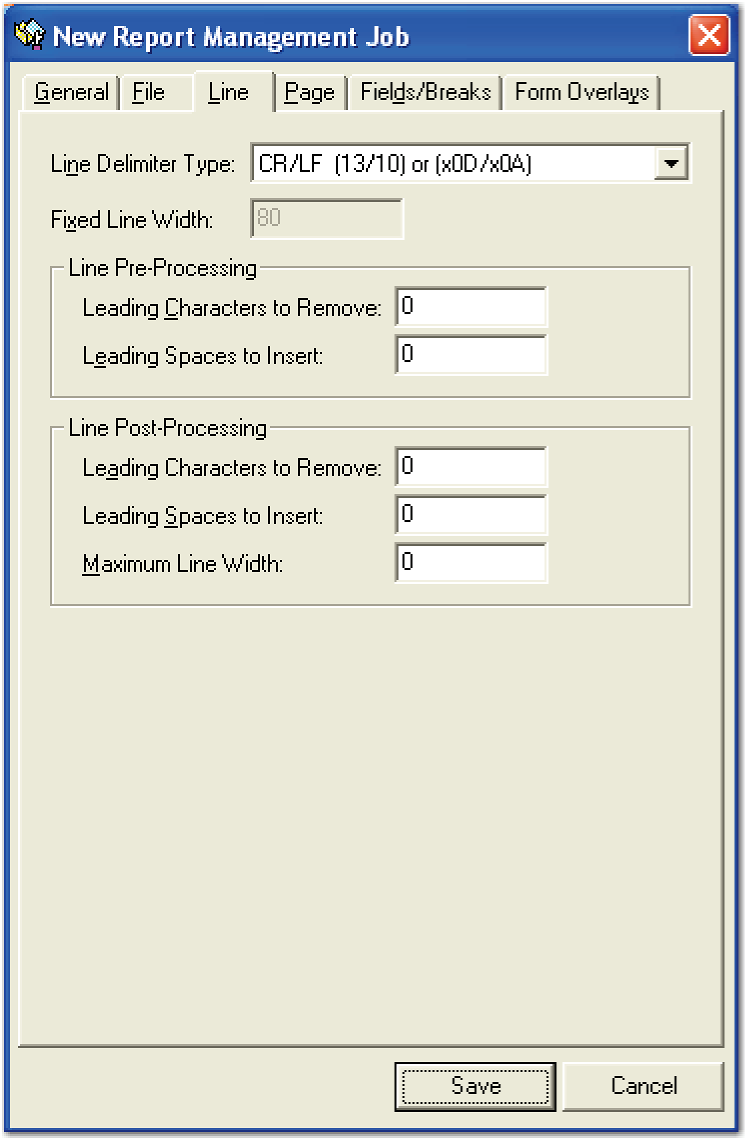
6. Select the **File** tab. The **Report Management Job – File** dialog box appears.



New Report Management Job – File Settings

7. Modify the file settings to meet the requirements of your data files. For descriptions of each setting, see the section on **File settings.**

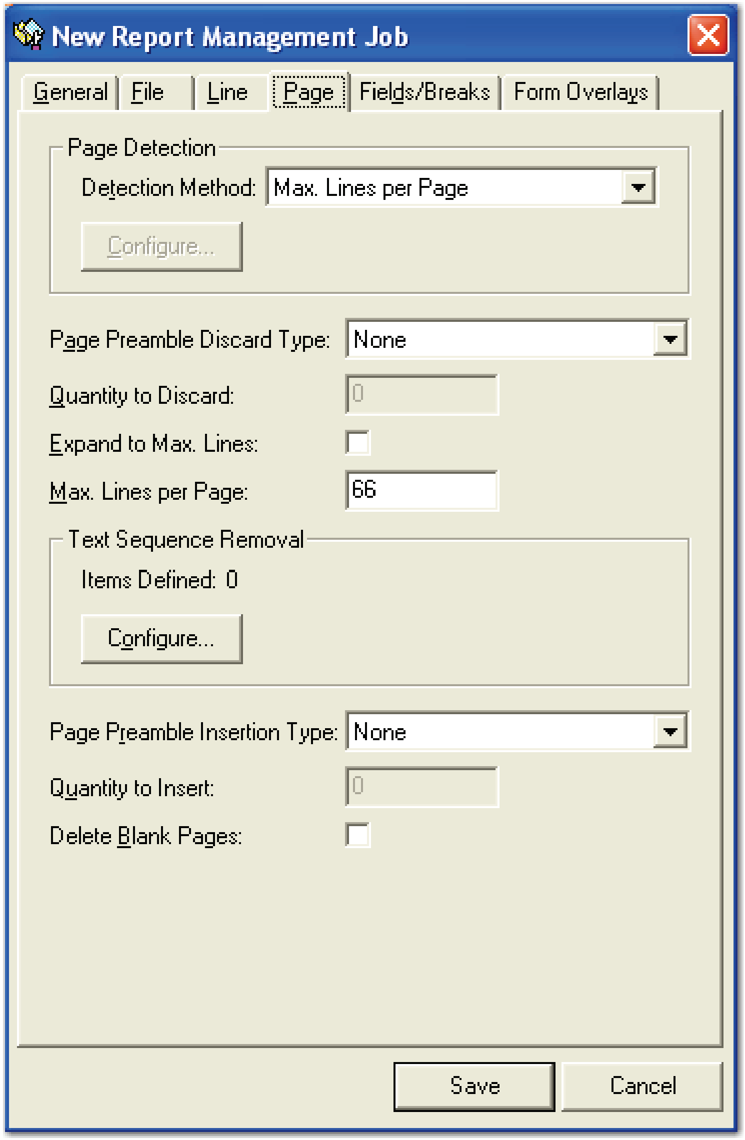
8. Select the **Line** tab. The **Report Management Job – Line** dialog box appears.



New Report Management Job – Line Settings

9. Modify the line configuration settings to meet the requirements of your data files. For descriptions of each setting, see the section on **Line settings.**

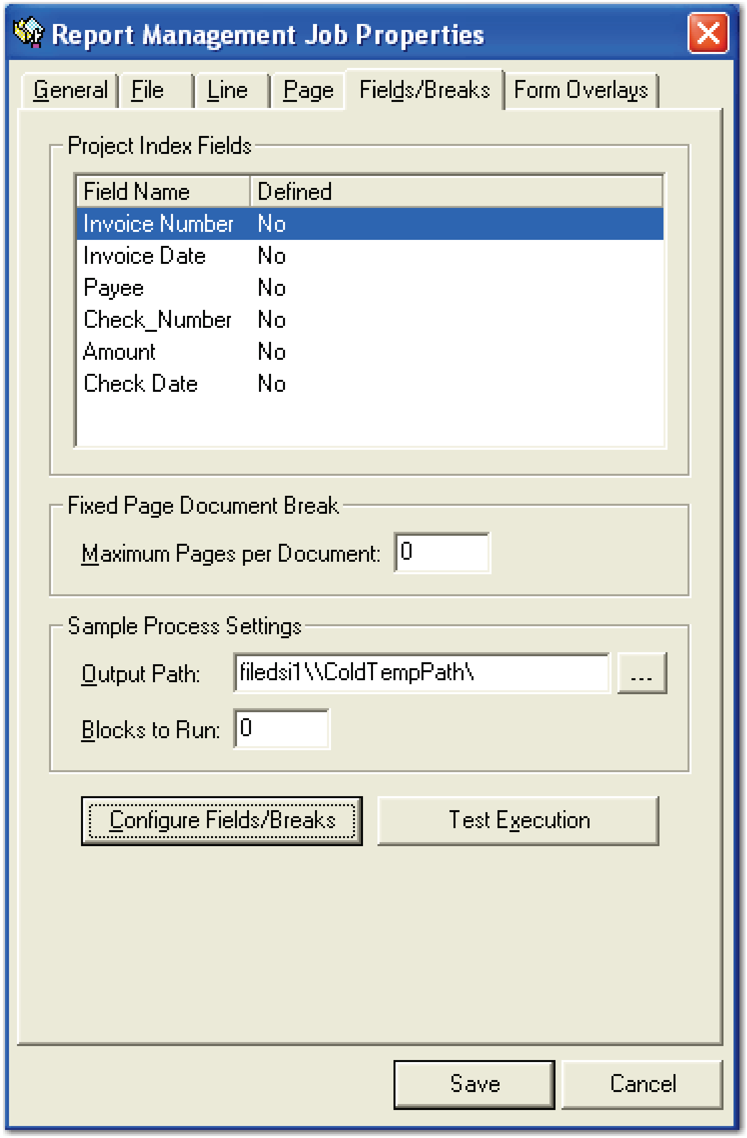
10. Select the **Page** tab. The **Report Management Job – Page** dialog box appears.



New Report Management Job – Page Settings

11. Modify the page configuration settings to meet the requirements of your data files. For descriptions of each setting, see the section on **Page settings.**

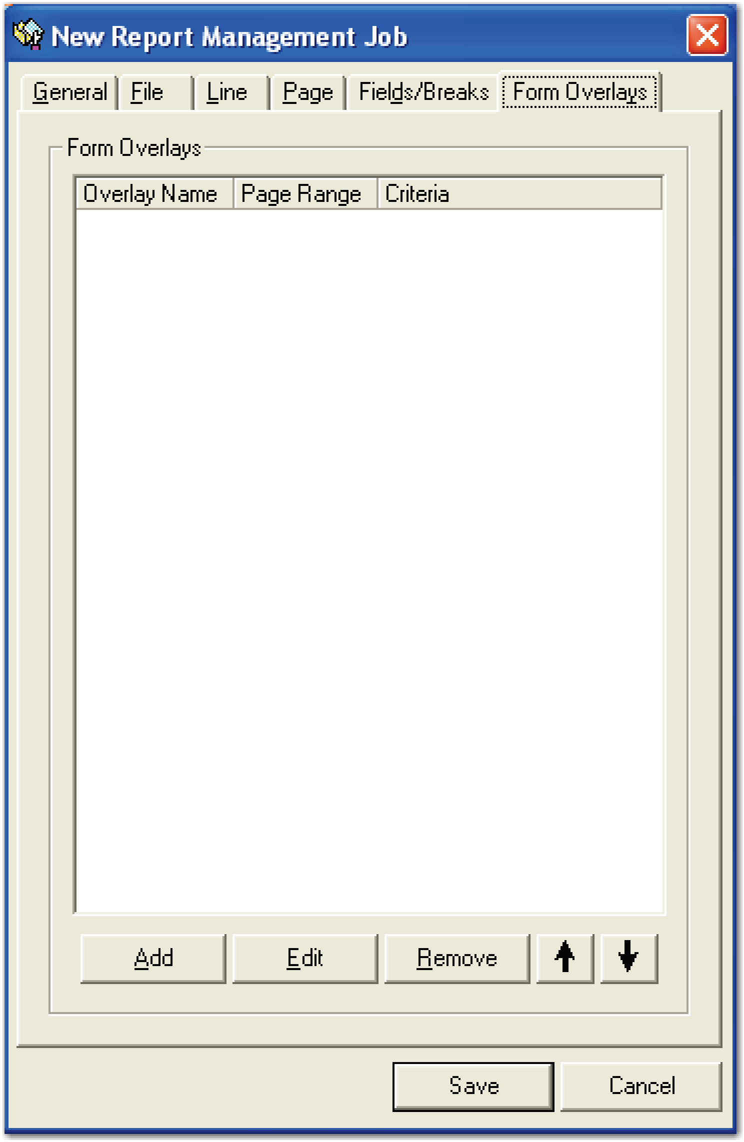
12. Select the **Fields/Breaks** tab. The **Report Management Job – Fields/Breaks** dialog box appears. For descriptions of each setting, see the section on **Page settings.**



New Report Management Job – Fields/Breaks Settings

13. Modify the fields and breaks configuration settings to meet your indexing requirements. For descriptions of each setting, see the section on **Fields/Breaks settings.**

14. Select the **Form Overlays** tab. The **New Report Management Job – Form Overlays** dialog box appears.



New Report Management Job – Form Overlays Settings

15. Configure the Form Overlays settings as desired. For descriptions of each setting, see the section on **Form Overlays.**

16. Click **Save**.

Editing an Existing Report Management Job

Any modifications that you make in a report management job will take effect immediately upon saving the job.

To edit an existing report management job:

1. In the **Report Management Jobs** screen, select the appropriate report management job, and then click the **Properties** icon. The **Report Management Job – General** tab appears.
2. Make any necessary changes to the job.
3. Click **Save** to update the report management job.

Deactivating a Report Management Job

Deactivating a report management job simply prevents the job from running as an automated process. You can easily reactivate a report management job by repeating this procedure and selecting the **Active** check box instead.

To deactivate a report management job:

1. In the **Report Management Jobs** screen, select the appropriate report management job, and then click the **Properties** icon. The **Report Management Job – General** tab appears.
2. Remove the check mark from the **Active** check box, and then click **Save**.

Deleting a Report Management Job

To delete a report management job:

1. Expand the appropriate project that and then select **Report Management Jobs.**
2. In the **Report Management Job** screen, select the report management job, and then click the **Delete** icon.
3. Click **Yes** to confirm the deletion.

Exporting a Report Management Job

PaperVision Enterprise includes the ability to export report management jobs. The export creates an XML document describing the job so it can be imported into another PaperVision Enterprise system. All of the job properties are included in the job definition except for the Input Paths, which must be configured separately. For ease of transport the XML document also includes the form overlay image files.

To export a report management job:

1. In the **Report Management Job** screen, select the appropriate report management job.
2. Click the **Export**  icon.
3. In the **Export Report Management Job** dialog box, locate the directory where the export will be written.
4. Enter the file name for the export.
5. Click **Save**. A message will notify you where the export was written.

Importing a Report Management Job

PaperVision Enterprise includes the ability to import a report management job that was created by exporting the configuration. The import process will import the entire configuration except the Input Path(s).

To import a report management job:

1. In the **Report Management Jobs** screen, click the **Import**  icon.
2. In the **Export Report Management Job** dialog box, locate the directory containing the report management job.
3. Select the XML file, and then click **Open.**
4. When the notification indicates the import was successful, click **OK**.
5. Edit the imported job and assign the appropriate input paths.

Chapter 10 – WorkFlow

PaperVision's Enterprise WorkFlow is an optional, separately licensed component of the PaperVision Enterprise suite. It allows users to automate business processes according to a set of procedural steps. There are no separate components to install as PaperVision Enterprise and PaperVision.net Enterprise include the WorkFlow components. WorkFlow definition, management, and monitoring are accomplished through the PaperVision Enterprise Administration Console.

Terminology

PaperVision Enterprise WorkFlow adheres by the terms described in this section. All of these terms are the standard terms prescribed by the WFMC (WorkFlow Management Coalition) or WFMC-approved synonyms.

WorkFlow Definition

A WorkFlow definition describes a series of activities (workstep definitions), and the order and conditions under which they execute, that are controlled by the WorkFlow engine to automate a business process.

WorkFlow/WorkFlow Instance

A WorkFlow or WorkFlow instance is a representation of a single enactment of a WorkFlow definition. A WorkFlow definition is just that – a definition, and a WorkFlow instance is the live execution of that definition. When a document is imported into PaperVision Enterprise, the system may, based on pre-conditions, spawn a WorkFlow instance of a WorkFlow definition. In other words, you may create a WorkFlow definition for a loan processing application, but the WorkFlow instances are the live representations of loans as they are processed through that WorkFlow. It is important to note that a single document can be active in multiple WorkFlow instances at the same time. If the document is deleted from the system, the WorkFlow instance will be transitioned to the end automatically with a history entry outlining that the document was deleted.

Pre-Conditions

Pre-conditions define a set of rules based on document index criteria that are used to determine if documents should automatically spawn new WorkFlow instances when a document is added to the system (via importing data groups or manually adding a new document). A WorkFlow definition can contain multiple pre-conditions. Once a pre-condition is met for a specific WorkFlow definition and the WorkFlow instance has been instantiated, no additional pre-conditions for that same WorkFlow will be evaluated. However, other WorkFlow definitions' pre-conditions will be evaluated to see if WorkFlow instances should be created for them. If no pre-conditions are defined for a WorkFlow, WorkFlow instances will have to be manually created by administrators or users explicitly granted access to do so.

> **Note**:
>
> "New version" pre-conditions are not re-evaluated for existing documents (those already residing in the system) when importing with the **Full Reload as New Object Version** option. "New Version" pre-conditions are only re-evaluated during document check-in.

Workstep Definition

A workstep definition describes an activity that forms one logical step within a process defined by a WorkFlow definition. This activity may be automated by the WorkFlow server (with no user intervention) or may require the user to perform one or a series of tasks. A workstep definition includes one or more tasks that are assigned to a single participant. While worksteps must be performed in the order defined by the WorkFlow definition, tasks within a workstep can be performed in any order.

Workstep/Workstep Instance

A workstep or workstep instance is a representation of a single enactment of a workstep definition within a WorkFlow instance. It is the smallest unit of work scheduled by the PaperVision Enterprise WorkFlow engine. Once a WorkFlow instance is created, there is always exactly one active/current workstep instance representing the workstep that the WorkFlow is currently on. The workstep instance may be owned by a single user who is currently working on it or it may be "un-owned" (waiting to be taken ownership of). A workstep instance does not have to be completed all at once. In other words, a user may perform certain tasks, leave the workstep to work on a different workstep, and then come back at a later time.

Tasks

A task represents an item of work that can be performed during a workstep. Since a workstep can only be owned by a single user, all of the tasks within that workstep that are performed must be performed by that one user, rather than different tasks being performed by different users. Tasks within a workstep do NOT have to be performed in any specific order. However, you can specify the order that the tasks are presented to the user.

Tasks can include user operations or automated operations. User tasks are simply instructions telling the user to do something. Once the user has done that task, they simply click on the task to mark it as completed. Automated tasks are operations that are carried out by the system for the user. Automated tasks include forcing a document index field to a specific value, executing command-line instructions (to launch separate applications or perform a system operation) and raising COM events (to allow a third-party application to interact with the workstep). Automated tasks are executed after the previous task in the workstep is executed.

Workstep Participants

A workstep participant is defined in the workstep definition to specify either a group of users who can perform the workstep or <Automated> to indicate that the server will perform every task in the workstep.

Workstep Transition

A workstep transition takes place when a workstep is completed and the flow of the WorkFlow moves (or transitions) to another workstep.

Post-Conditions

Post-Conditions are rules that are evaluated when a workstep instance is activated, and then after each task is processed, to determine whether the workstep is completed.

Post-conditions contain two pieces of information: the evaluation rules and the transition workstep. The evaluation rules specify which tasks must be completed and/or any document index criteria that must exist in order for the rule to be satisfied. If the rule is satisfied, then the workstep is marked as completed and then transitioned to its transition workstep. The transition workstep specifies which workstep is next. The transition workstep can also specify the end of the entire WorkFlow or to transition to another WorkFlow entirely.

A workstep definition may contain multiple post-conditions. Each post-condition is evaluated in order. In other words, if a workstep contains multiple post-conditions, each post-condition will be evaluated in order – the first post-condition that is met will initiate the workstep transition, and the workstep will be completed.

Workstep Owner

As workstep instances are created, they are made available for any of the defined workstep participants to take ownership of. At this point, the specific user (or system) that maintains ownership of the workstep instance is known as the Workstep Owner. Once ownership has been gained, no other participants can perform any of the tasks for that particular workstep instance. Ownership of a workstep instance can only be revoked by an administrator.

Planning Your WorkFlow

PaperVision Enterprise WorkFlow can support complex WorkFlows. For best results, fully plan and define the business process that you are automating before you attempt to define it in the Administration Console. Ensure you know the answers to the following basic questions before you begin to tailor your definition to fit your specific organization:

- What is the scope of the business process? Exactly what are you trying to accomplish?
- What steps must be performed to complete the entire business process?
- Who needs to perform those steps?

- What are all of the tasks that must be performed in those steps?
- What signifies that a step is completed and ready for the next step? Is there a decision that must be made to determine the next step (decision routing)? Are there tasks that must be finished (completion routing)? Are there document index criteria that must be met (calculated value routing)?
- What should initiate a new WorkFlow? Are all documents coming into a project supposed to be processed or only specific documents?

Worksteps vs. Tasks

One point of confusion in defining WorkFlow definitions is determining whether an operation is simply a task in a workstep or whether it should be a separate workstep. When you are designing WorkFlow definitions, you can use the following guidelines:

- If operations must be completed in a specific order, the operations should be separated into separate Worksteps since multiple tasks in a Workstep can be performed in any order.
- If the operations must be completed by separate groups of users, those operations need to be split into multiple Worksteps.
- If there is a benefit (processing time, cost, etc) for splitting multiple operations across multiple users, you may want to consider separating them into separate Worksteps since only a single user can perform all of the tasks in a specific Workstep instance.

WorkFlow Engine

In order to best optimize your WorkFlow definitions, this section explains what occurs "under the hood" as the WorkFlow engine processes WorkFlow and Workstep instances.

Automated Worksteps

When a Workstep's participant is listed as **<Automated>**, it is designated to be handled by any computer running the PaperVision Automation Service [for which the WorkFlow (Automated) operation is enabled]. When the automation service determines that it is time to process automated workstep instances, the following events occur:

1. The server retrieves a list of automated workstep instances that are unowned.
2. The server loads the WorkFlow definition for the first workstep.
3. The server then takes ownership of that workstep instance (so other servers processing WorkFlow do not try to run the same workstep).
4. The Workstep's post-conditions are evaluated to see if the workstep should be transitioned. If a post-condition is met, the server transitions the Workstep to the next Workstep.

5. If no transition is yet necessary, the server processes the first task in the workstep.
6. Steps 4 and 5 are repeated until there are either no more tasks to process or a post-condition is met. If there are no more tasks to process and no post-conditions have been met, the server will transition the workstep to a Stop/End state, finalizing the WorkFlow.
7. Steps 2 through 6 are repeated until all of the worksteps have been processed.
8. The server then repeats steps 1 through 7 for any remaining entities.

Non-Automated Worksteps

When a user accesses a Workstep instance that the user owns, the following events occur:

1. The Workstep is processed to see if any post-conditions are already met. If so, the Workstep is completed and the server transitions to the next Workstep.
2. PaperVision Enterprise looks to see if there are any automated tasks (such as firing a COM event or executing a command-line operation) listed as the next task. If so, that task is executed and then steps 1 and 2 are repeated until there are no automated tasks next in line.
3. The user will select a task (to mark it as completed).
4. PaperVision Enterprise will evaluate the post-conditions to see if any are met. If so, the Workstep is completed and the server transitions to the next Workstep.
5. PaperVision Enterprise looks to see if there are any more automated tasks (such as firing the COM event or executing a command-line operation) listed as the next task. If so, that task is executed and then steps 4 and 5 are repeated until there are no automated tasks next in line.
6. Steps 3 through 5 are repeated until the workstep is completed.

Email Tags

PaperVision Enterprise provides the Send Email task type that is available when you configure individual tasks within a workstep. This task type allows you to configure the sender, recipient, subject, and body components of the email. PaperVision Enterprise also includes email tags that allow email fields to automatically be populated based on WorkFlow instance information, workstep instance information, and document information. This feature allows administrators to tailor the emails sent from the WorkFlow to the dynamic needs of an internal process. Except where indicated, tags can be used in any of the email values (send from, send to, subject, body). All tag settings are required.

Tags for Client and Automated Workstep Tasks

The following tags can be used in worksteps that are both automated (workstep's participant is listed as <Automated>) and non-automated (workstep's participant is an actual user).

Tag	Description
<WF:WSINSTDOCID>	WorkFlow Instance Document ID
<WF:WFINSTID>	WorkFlow Instance ID
<WF:WSINSTID>	WorkStep Instance ID
<WF:WFHISTORY>	WorkFlow Instance History
<WF:PROJID>	Project ID
<WF:WFDEFID>	WorkFlow Definition ID
<WF:WFNAME>	WorkFlow Definition Name
<WF:WSDEFID>	WorkStep Definition ID
<WF:WSNAME>	WorkStep Definition Name
<WF:CURRENTDATETIME>	Current Date/Time in "yyyy-mm-dd hh:nn:ss" format
<WF:DOCINDEX~FieldName>	Document's index field value for the specified field (as specified by the FieldName)
<WF:DOCGRANT **~Expiration** **~Password** **~FieldsNotVisible~BaseURL>**	This tag creates a document grant with the specified expiration date/time (in "yyyy-mm-dd hh:nn:ss" format) and password (passwords cannot contain ~ or < symbols). **FieldsNotVisible** specifies the names of any index fields (pipe-delimited) that should not be visible in the document grant. **BaseURL** specifies the URL to the site where the document grant is created (i.e. https://login.imagesilo.com). This tag is only valid in the email body. Note that in order for a client (non-automated workstep) to be able to perform this, the user must have the security right to create document grants. Also, document security tracking for creating the grant is only performed if this is performed as a client operation.
<WF:LINKDOC **~NewWin** **~BaseURL>**	This tag creates a link (similar to document grants) that will force the user to log in. Once logged in, user will be taken directly to the document referenced by the WorkFlow instance that generated the email. If NewWin is the number one (1), the document will be displayed

Tag	Description
	in a new browser window. Otherwise the document will be displayed in the same window as the user login occurs. BaseURL specifies the URL to the site where the link is created (i.e. https://login.imagesilo.com). This tag is only valid in the email body.`
<WF:LINKWFINST ~IgnoreLocateMsg ~BaseURL>	This tag creates a link (similar to document grants) that will force the user to log in. Once logged in, user will be taken directly to the WorkFlow instance that generated the email. The user will automatically take ownership of the workstep for the WorkFlow instance. If the instance is already owned by another user, the appropriate WorkFlow instance list will be displayed. If **IgnoreLocateMsg** is the number one (1), no message will be displayed in the event that the workstep is already owned (or couldn't be located), otherwise a message is displayed. **BaseURL** specifies the URL to the site where the link is created (i.e. https://login.imagesilo.com). This tag is only valid in the email body.
<WF:DOCPAGES ~Format~x-y>	Includes attachments of the specified page range (*x-y*). If the document consists of images, the images are converted into a single, multi-page TIF or PDF file (as specified by the **Format** value). Format and page range are required (otherwise an error occurs). Automated WorkFlow email creation attaches the single PDF file (since all pages are within the single PDF), regardless of the specified page range. This tag is only valid in the email body. DataFlow/PVERM documents are converted to one of the following: • A single text file (if no pages have overlays) • A single multi-page TIF or PDF file (if all pages have overlays) • A single text file (containing all of the pages of the document) AND a single TIF or PDF file (containing all of the pages that

Tag	Description
	have overlays) if only some of the pages have overlays **Note**: The temporary email attachment path must be specified in Global Administration's System Settings. For more information, see the section on the **Attachment Path** setting in **Chapter 2 – Global Administration**.

Using the [CURRENTDATETIME] Tag in Date Fields

In some scenarios, you can use the [CURRENTDATETIME] tag to represent the current date and time in date fields. First, you can use the tag when you assign dates as criteria that define WorkFlow pre-conditions. This is particularly useful in situations where WorkFlow pre-conditions need to be defined that are of an exact age.

Additionally, if you create document grants as part of a WorkFlow email task, you can assign expiration dates with the [CURRENTDATETIME] tag. In this scenario, you can use the tag to offset the expiration date from the date when the document grant was executed. You can also use the [CURRENTDATETIME] tag in date fields (automated worksteps only) when forcing index values in a WorkFlow task.

A specified number of years (Y), months (M), days (D), hours (H), minutes (N), or seconds (S) can be added to or subtracted from the current date and time. Possible uses for the [CURRENTDATETIME] tag are as follows:

- [CURRENTDATETIME] = Current Date/Time
- [CURRENTDATETIME+1Y] = Current Date/Time plus 1 year
- [CURRENTDATETIME-12M] = Current Date/Time minus 12 months
- [CURRENTDATETIME+2D] = Current Date/Time plus 2 days
- [CURRENTDATETIME-96H] = Current Date/Time minus 96 hours
- [CURRENTDATETIME+900N] = Current Date/Time plus 900 minutes
- [CURRENTDATETIME+120S] = Current Date/Time plus 120 seconds

For more information on entering criteria, please refer to **Appendix E – Search Criteria.**

Using Email Tags

Since email tags can be used in any of the email values, email tags can provide powerful capabilities in automating a number of tasks. For instance, if the PaperVision Message Capture Server is being utilized to capture incoming emails for a customer support project, a WorkFlow could be used to generate an automated response back to the requesting user by simply inserting the following value into the WorkFlow task's **Send To** field:

<WF:DOCINDEX~Sender>

In an email body, it may be desirable to send a status to a loan applicant as follows:

Dear <WF:DOCINDEX~Applicant Name>,

This message is being sent to update you on the status of your <WF:DOCINDEX~Loan Type> loan request. The application is currently in the <WF:DOCINDEX~Loan Status> stage of processing. If you would like to review your loan application, simply select the link below:
<WF:DOCGRANT~2007-10-30~AppleCore~Agent~https://login.imagesilo.com/>

Your password to access the document is AppleCore.

Best Regards,

ABC Loan Company

The email body specified above may create an actual email that reads as follows:

Dear John Smith,

This message is being sent to update you on the status of your home loan request. The application is currently in the income review stage of processing. If you would like to review your loan application, simply select the link below:
https://login.imagesilo.com/DocGrant.ASP?GrantID=ABEFKJDEWEFJ

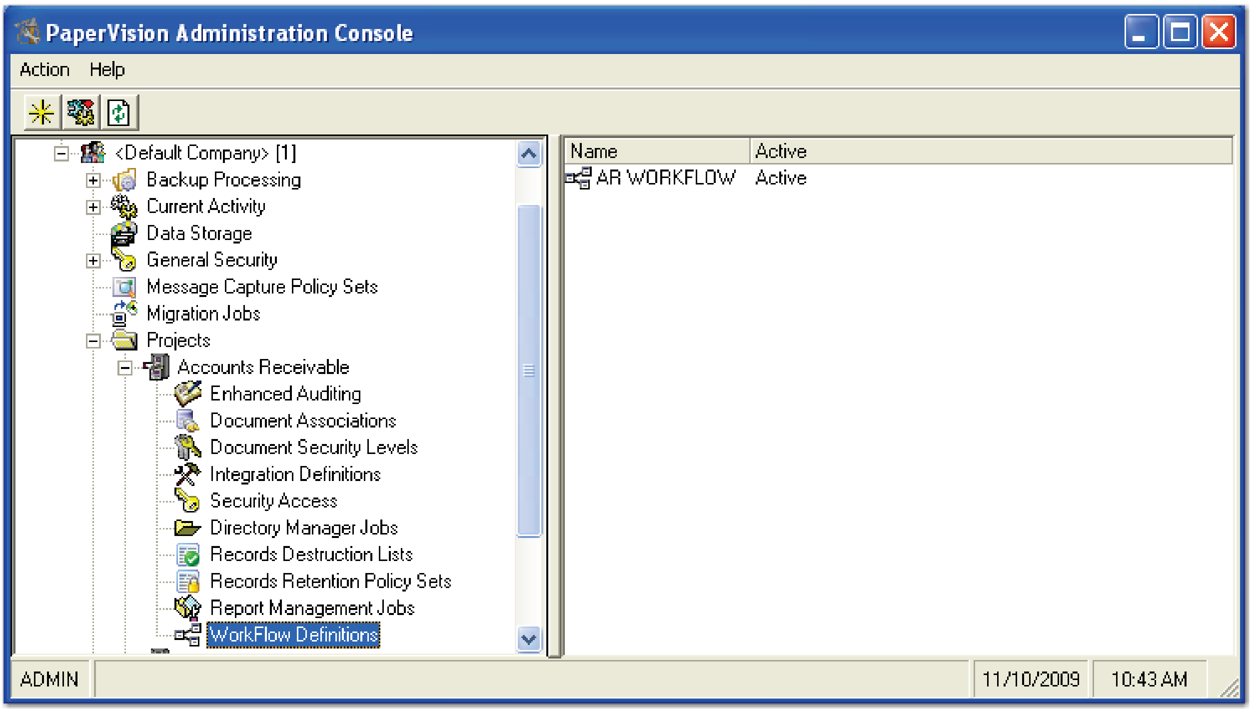
Your password to access the document is AppleCore.

Best Regards,

ABC Loan Company

WorkFlow Definitions

PaperVision's Enterprise WorkFlow allows administrators to define WorkFlows graphically, without any programming or scripting. Before defining your WorkFlows, ensure that the user groups who will act as workstep participants have already been created in **General Security.** To view the WorkFlow Definitions for a specific project, select **Projects** > **Project Name** > **WorkFlow Definitions**.



WorkFlow Definitions

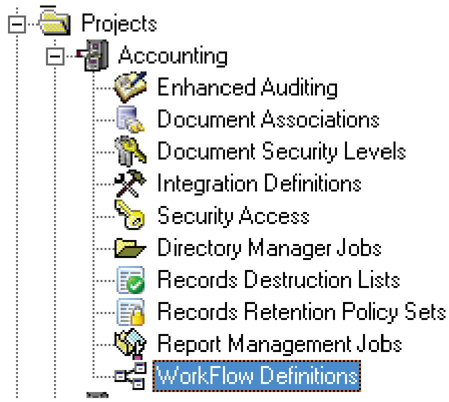
> **Note**: WorkFlow Administrators do not have access to documents or functions in any projects unless the Global Administrator grants access to these items.

Creating a New WorkFlow Definition

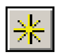
Before defining your WorkFlow, ensure that the user groups who will act as workstep participants have already been created in General Security.

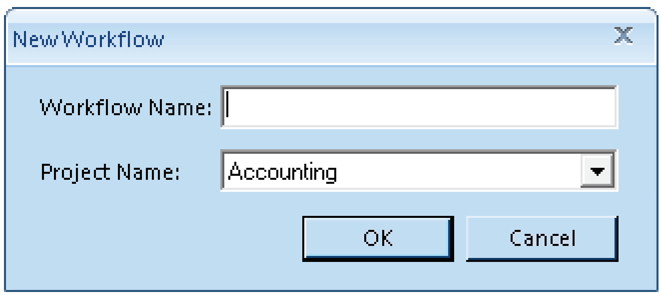
To create a new WorkFlow definition:

1. Expand the Projects folder and then navigate to the **WorkFlow Definitions** link for the appropriate project.



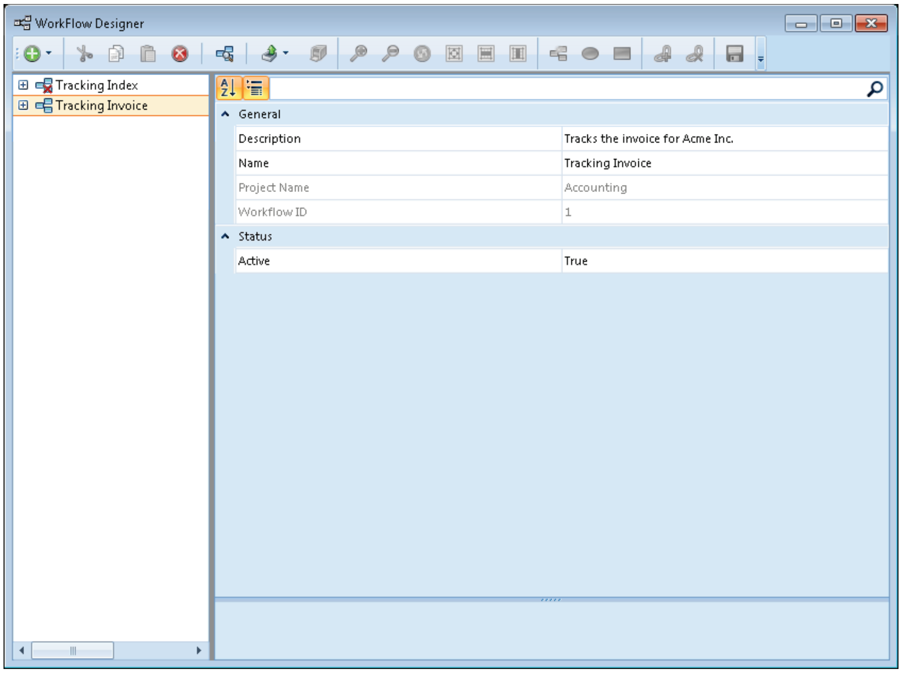
WorkFlow Definitions link

2. Click the **New**  icon. The **New WorkFlow** dialog displays.



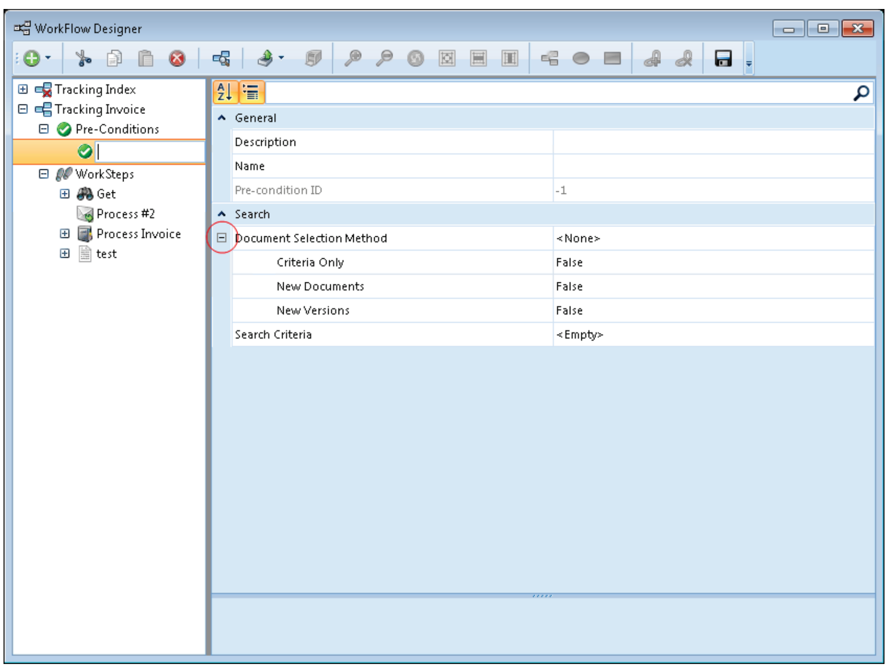
New WorkFlow dialog

3. Enter a name for the new WorkFlow definition.
4. Select the project to which this WorkFlow will be associated from the drop-down list.
5. Click **OK**. The **WorkFlow Designer** screen displays.



WorkFlow Designer screen

6. Optionally enter a description for the WorkFlow.
7. Right click the WorkFlow and select **Add Pre-Condition**. The **Search** fields display.



WorkFlow Designer with Document Selection Method

8. Click the expanding arrow on the left side of the **Document Selection Method** field to expand the selection window.

9. Select one or more **Document Selection Methods** that will be applied to the new pre-condition:

   - Criteria Only (document does not have to be a new document or a new version)

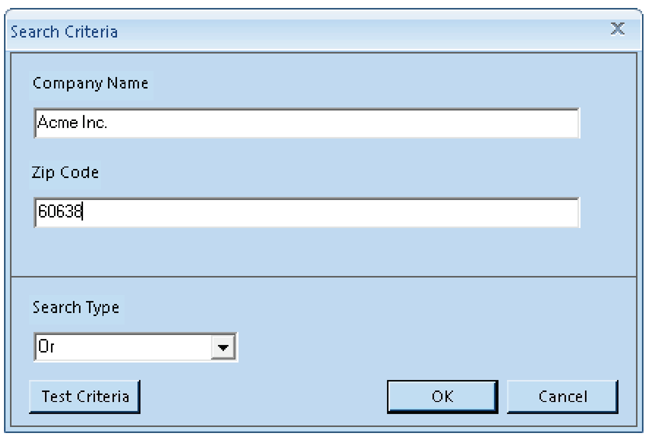
     > **Note**: When the WorkFlow (Pre-Conditions) automation service scheduling task executes (as configured in the global administration settings), it looks for any pre-conditions defined with the "Criteria Only" Document Selection Method. If any documents meet the criteria, the WorkFlow instance is created and the document is marked so that WorkFlow definitions will no longer be processed against the document. The mark on the document is removed when an index field marked as a "WorkFlow Trigger" is modified. This feature allows an index field to serve as a date that triggers a WorkFlow instance for a document.

   - New Documents

     > **Note**: If you select the "New Documents" method and you run a full/reload import of a data group whose documents are already involved in an existing WorkFlow instance, duplicate documents may result.

   - New Versions (of existing documents – when a user checks in a new version)

10. Select the **Search Criteria** field and then click the ellipse. The **Search Criteria** dialog displays.



Search Criteria dialog

11. Enter the criteria that define the documents that will automatically instantiate new WorkFlow instances when they are imported or added to the system. You can enter an asterisk "*" in a single field to indicate that all documents that are loaded for the WorkFlow's project should be processed.

12. Click the **Test Criteria** button to validate the criteria. You will be notified if any errors exist.

13. Click **OK** to save your criteria. The new pre-condition will be listed in the WorkFlow definition.

14. Repeat steps 7 through 13 for each additional pre-condition.

> **Note**:
>
> In most scenarios, only one pre-condition will be required.

Defining WorkFlow Definitions

To define a new WorkFlow:

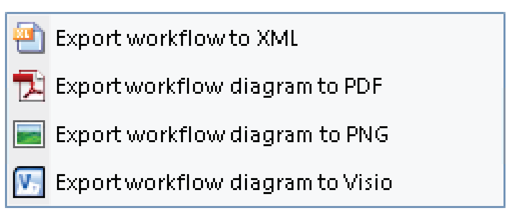
1. Click the **Add** icon and then select **Add WorkFlow** from the popup menu.
   - The WorkFlow steps appear in graphical format.
   - Details on defining worksteps are covered in the Worksteps Window topic.
2. Once all of your worksteps have been defined, click the **Save** button in the **WorkFlow Designer**. As documents are imported or added to the system, their index values will be compared with the WorkFlow's preconditions and, if they match, will automatically instantiate new WorkFlow instances.

Exporting WorkFlow Definitions

To export a WorkFlow Definition:

1. Select the WorkFlow Definitions option from the PaperVision Enterprise Administrator main page.
2. Double click the WorkFlow to be exported.
3. Click the **Export** button and then select the export format from the Export drop-down list.

> **Note**: Select the Export workflow to XML option to import a WorkFlow back into PaperVison Enterprise.



WorkFlow Export Options

4. Navigate to the directory in which the exported WorkFlow diagram is to be stored.
5. Click **Save** to store the WorkFlow diagram.

Defining Worksteps

This topic provides an overview of the navigational operations in the Worksteps window. Within the Worksteps window, you can add Worksteps to WorkFlow definitions and link

Worksteps. Additionally, you can define Workstep tasks and post-conditions that complete the WorkFlow definition process.

To define the worksteps for a WorkFlow definition, it is recommended to:

1. Graphically create all of the worksteps that make up the WorkFlow
2. Graphically link all of the worksteps to designate the flow from one workstep to the other
3. Define the tasks and post-conditions for each workstep

The following operations are available in the **WorkFlow Designer**:

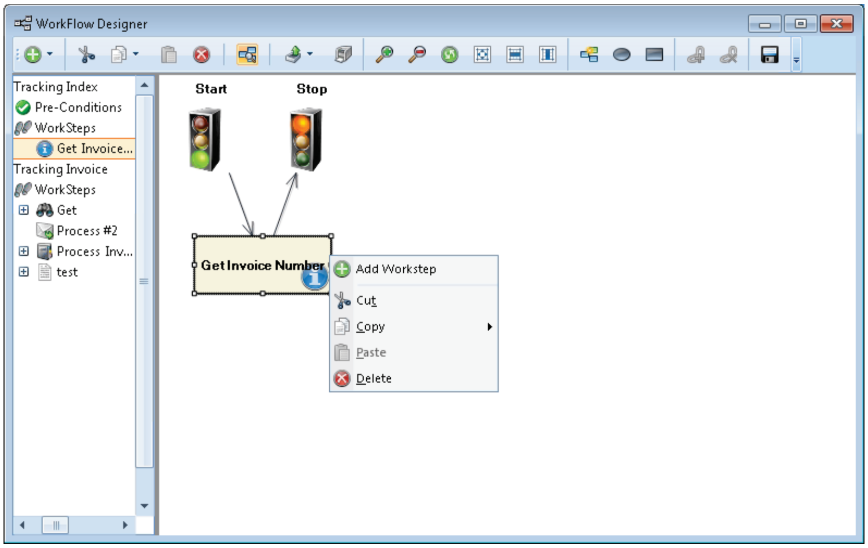
Icon	Description
	Displays a drop down list that contains options to add the following: • Add Workflow - Adds a new WorkFlow definition to work • Add Pre-Condition - Add a precondition to the WorkFlow • Add Workstep - Adds a Workstep to the WorkFlow • Add Task - Adds a new task to the selected Workstep • Add Post-Condition - Add a post condition to the selected Workstep
	Cuts the selected item
	Copies the selected item to the clipboard
	Pastes the copied item into the current WorkFlow definition
	Deletes the currently selected item
	Toggles the designer between the grid view and the graphical view
	Exports the WorkFlow to: - XML - PDF - PNG - Visio
	Prints the WorkFlow
	Zooms in on the WorkFlow diagram
	Zooms out from the WorkFlow diagram

Icon	Description
	Resets the Zoom feature to the default settings
	Scales the WorkFlow Definition to fit the size of the window
	Scales the current WorkFlow diagram to the width of the screen
	Scales the current WorkFlow diagram to the height of the screen
	Reloads the Designer when in graphical view
	Creates an ellipse in the WorkFlow definition
	Creates a rectangle in the WorkFlow definition
	Links the currently selected Workstep from another Workstep
	Deletes the link between the selected Worksteps
	Saves the WorkFlow definition

Define Worksteps for a WorkFlow Definition:

1. Click the **WorkFlow Definitions**.
2. Select an existing WorkFlow definition and click the WorkFlow Properties icon . The WorkFlow Designer screen displays.
3. Click the **Add** icon and then select **Add Workstep**.

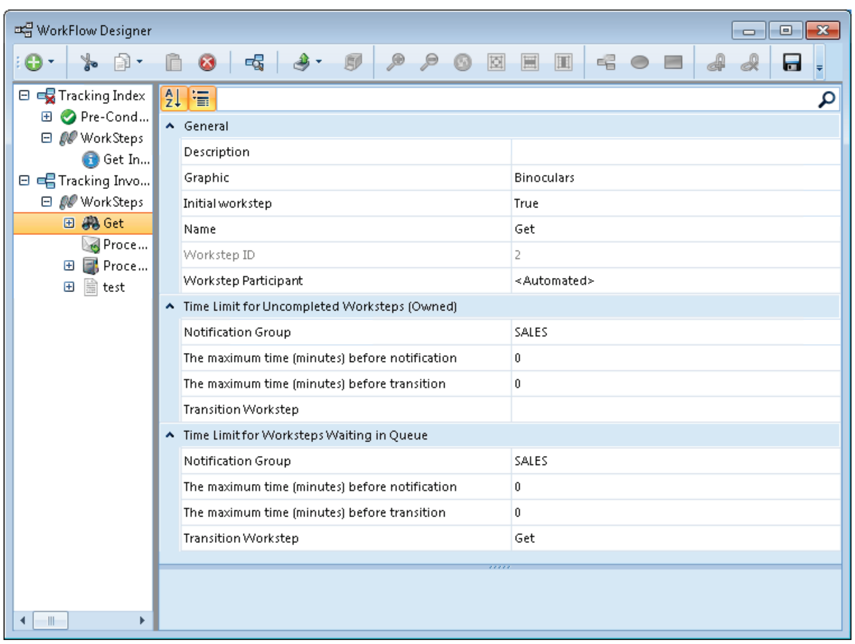
> **Tip**:
>
> You can also right-click on an existing Workstep and select the operation from the context menu.



Right-Clicking a Workstep - Context Menu

> **Note**:
>
> The new workstep will automatically be linked to the currently selected workstep. This helps you quickly design your layout and also allows you to change the workstep links at a later time.

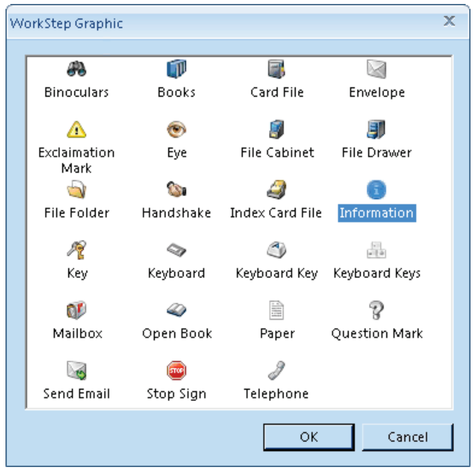
4. Optionally enter a description for the new Workstep.



WorkFlow Designer - Grid View

5. Optionally select a graphic for the Workstep. The default graphic for all Worksteps is the Information icon .

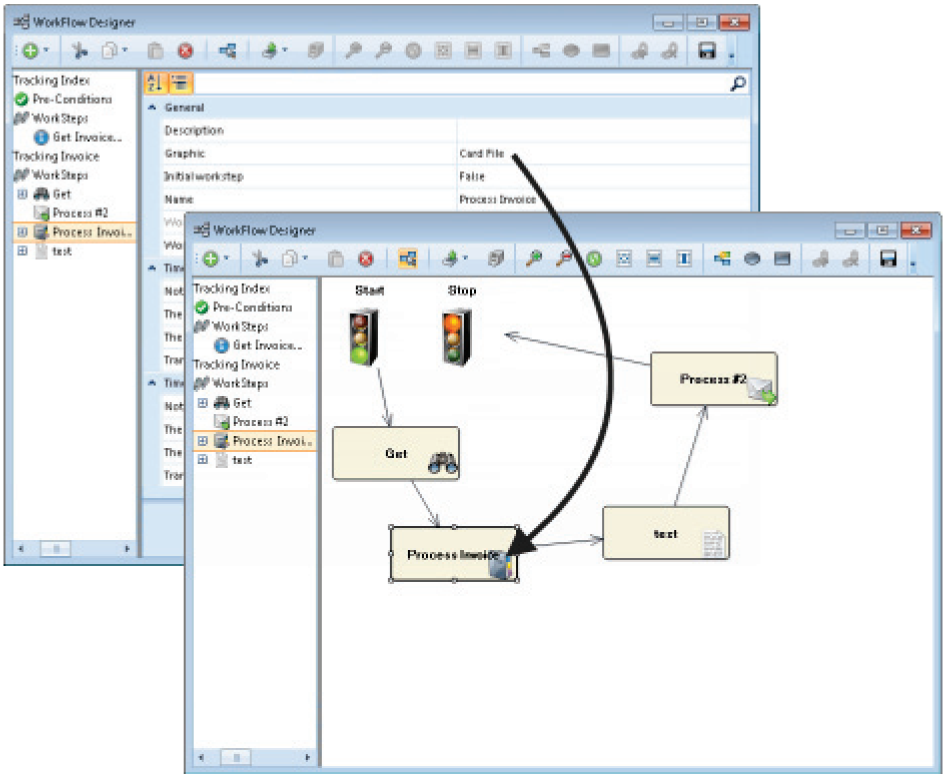
   a. Select the Graphic field and then click the ellipse. The WorkStep Graphic popup displays.



WorkStep Graphic popup

   b. Select a graphic from the Workstep Graphic popup, and then click OK to display the graphic in the Workstep.

The graphic displays in the lower right-hand corner of the Workstep icon when the designer is in graphical mode.



Grid and Graphical Designer views

6. In the Initial workstep field, choose from the following:
   - If this is the first Workstep in the definition, select True from the drop-down list.
   - If this is not the first Workstep in the definition, select False from the drop-down list.
7. Enter a name for the new Workstep.
8. Select a participant for the new Workstep from the drop-down list.
9. Optionally select a notification group from the drop-down list.
10. Enter the maximum number of minutes the Workstep waits in queue before it transitions to another Workstep **[Max time (minutes) before transition]** and/or before it sends a **notification [Max time (minutes) before notification]**.
11. If you are defining a maximum time before transition, select the **Transition Workstep** (if it exists, otherwise, you may want to change this at a later time) where the old Workstep instance should automatically transition to.
12. If you are defining a maximum time before notification, select the **Notification Group** (users who will receive the automated notification).
13. Repeat steps 8-10 to define time limits for the maximum number of minutes an owned Workstep instance can remain uncompleted.

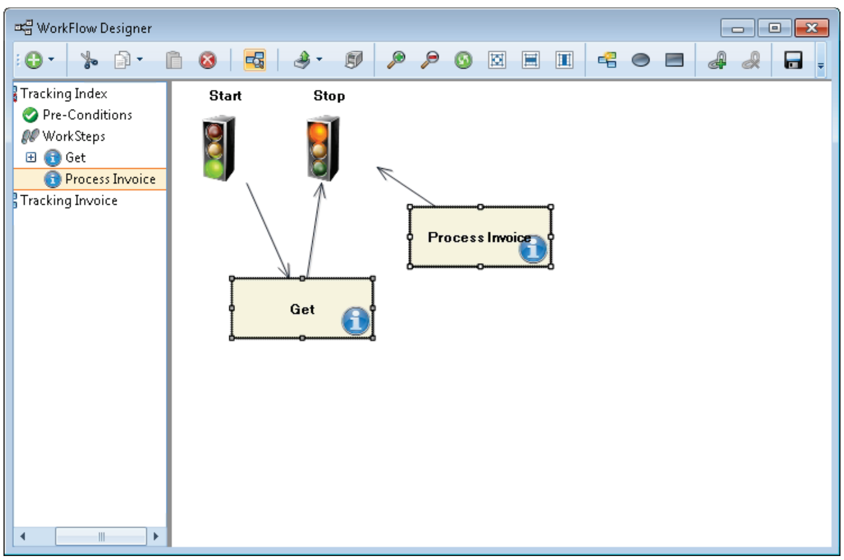
14. Click **OK** to save the new Workstep. The new Workstep will be added to the WorkFlow definition.
15. Repeat steps 1 to 13 for each additional Workstep.

Linking and Removing Links from worksteps:

After you have defined the worksteps, you may need to link them to designate the flow of the worksteps. Worksteps are linked from another workstep. In other words, when you select a workstep and choose to link it, you will then select the workstep that will have previous control.

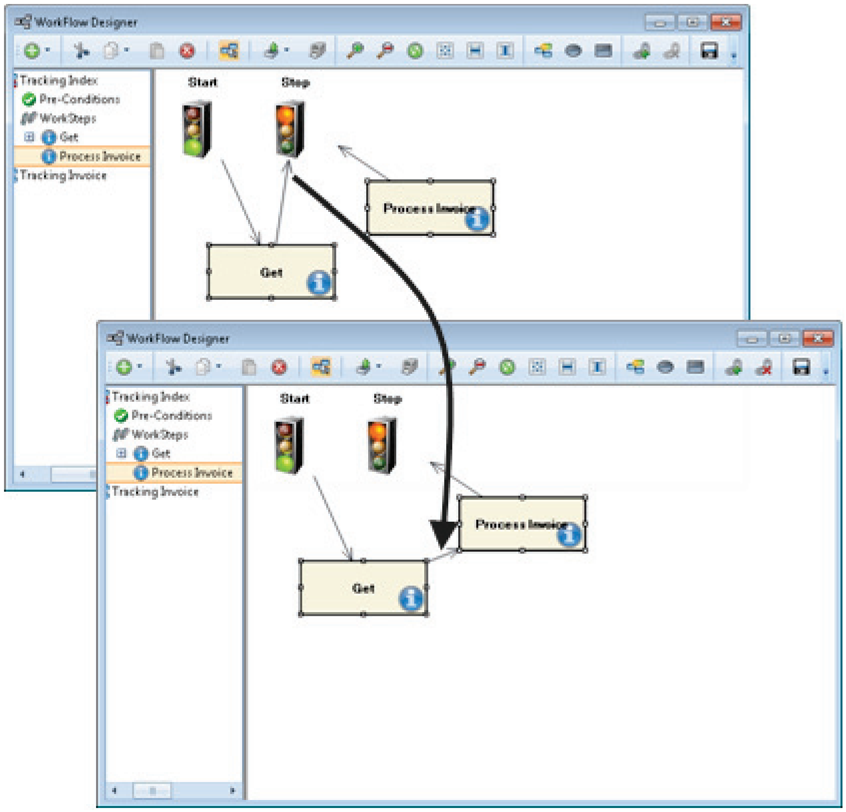
To link Worksteps

1. Select the Worksteps that need to be linked.
2. Click the Link Workstep icon.



Select Workstep

The selected Worksteps are linked.



Linked Worksteps

3. Select Repeat steps 1 and 2 for any additional links that need to be created.
4. To remove any unnecessary links, select the linked Worksteps, and then click the Delete Link icon.

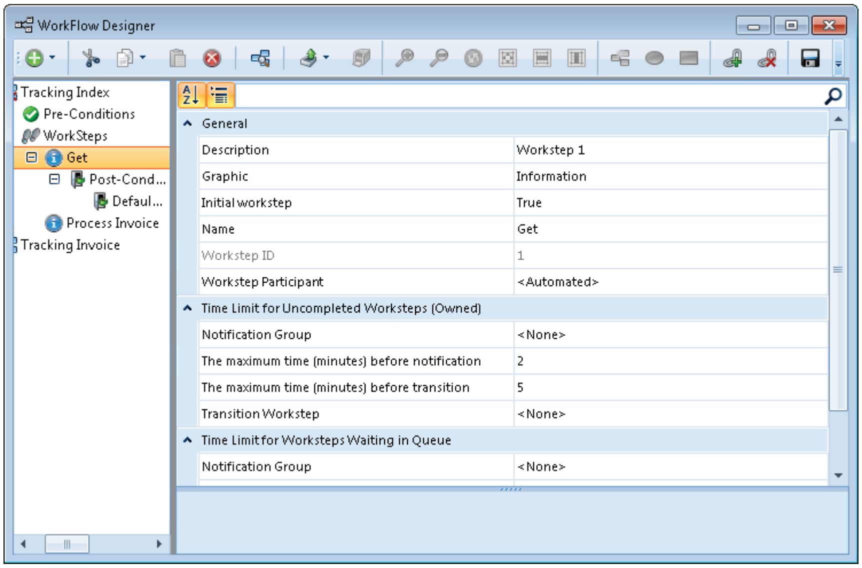
Defining Workstep Tasks

After you have graphically defined the worksteps and their flow, you can define workstep tasks.

To define workstep tasks:

1. In the **WorkFlow Designer** screen, select the appropriate Workstep.
2. Click the **Add** icon and then select Add Task from the drop-down list. The WorkFlow Definitions Properties screen displays the task in Grid view.

> **Note**: Alternatively, right click a Workstep in the column on the left and select Add Task from the popup menu.



WorkFlow Designer - Add Task

3. Optionally enter a description for the task.
4. Enter a name for the task.
5. Select a **Task Type**. The following table describes each available option.

Task Type	Description
User Operations	User operations instruct the user to perform a task. Once the user has completed the task, the user will click on the task to mark it as completed. **User operations have the following options:** • Require Confirmation: End user will have to select **OK** from a message box that will appear when the task is complete. • Message: Specifies the message (or question) that is displayed in message box
Launch Application/Shell	This task type causes the server (if this is an automated task) or the client’s computer to execute the specified command-line program. This task type has the following options: • Path: Specifies the full path and file name of the command to execute • Operation: Specifies the ”Shell” operation to perform • Parameters: Specifies the parameters that are passed to the

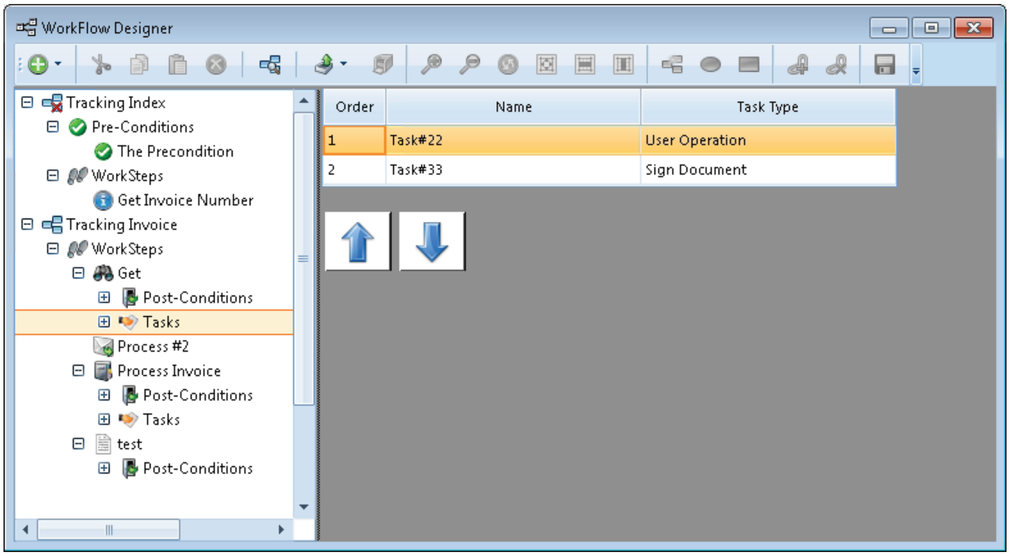
Task Type	Description
	command line when executing the command The following Parameter Tags can be used for both automated and client tasks: • WF:ENTITYID - Entity ID • WF:WSINSTDOCID - WorkFlow Instance Document ID • WF:WFINSTID - WorkFlow Instance ID • WF:WSINSTID - Workstep Instance ID • WF:PROJID - Project ID • WF:WFDEFID - WorkFlow Definition ID • WF:WFNAME - WorkFlow Definition Name • WF:WSDEFID - Workstep Definition ID • WF:WSNAME - Workstep Definition Name • WF:CURRENTDATETIME - Current Date/Time in “yyyy-mm-dd hh:nn:ss" format • WF:DOCINDEX~FieldName - Document’s index field value for the specified field (as specified by the FieldName) The following Parameter Tags can be used for only client tasks: • WF:USERNAME - Current User Name • WF:SESSIONID - Current Session ID
Raise COM Event	This task type is designed for systems integrators to integrate task management into third-party applications. It will cause the server’s COM component (PVSystem) to raise the WorkstepTaskRequest event if this is an automated task. If this is not an automated task, it will cause PaperVision Enterprise’s WorkFlow control (PVDMWfView) to raise the WorkstepTaskRequest event. **This task type has the following options:** • Info Value: Specifies information that will be passed when the event is fired - this information will be with the WorkstepInst class and WorkstepDef class that are also included automatically
Alter Index Values	This task type automatically displays the Alter Index Values screen while viewing the document. If the user selects Save, the task will be marked as completed; this task type has no

Task Type	Description
	associated options
Send Email	This task type sends an email to the specified address with the specified body content (and attachments). See Email Tags for information on using dynamically generated information. **This task type has the following options:** Send From: Specifies the e-mail address from which the email is sent; this value is only used for automated Worksteps Send To: Specifies the email recipient; multiple recipients can be specified by separating them with commas, pipe characters ("|"), or semicolons Subject: Specifies the value displayed in the email subject Body: Specifies the contents of the email body **Note**: Index field values are not formatted when sending emails (in automated Worksteps only).
Force Index Value	Causes a document index field value to be changed to a specified value. This task type has the following options: Field: Specifies the document index field to be updated Value: Specifies the value to be inserted into the document index field **Note**: When forcing index values, you can assign the [CURRENTDATETIME] tag to date fields (automated Worksteps only).
Sign Document	Requires the user to sign the document.

6. After selecting the task type and configuring its settings, click OK to save the task. The new task will be added to the Workstep.
7. Repeat steps 2 to 6 for any additional tasks.

Reorder Tasks

1. Click the **Tasks** option in the left panel of the **WorkFlow Designer** screen.



Task Ordering

2. Select a Task to reorder.
3. Click the up or down arrow to move the task to the appropriate place.

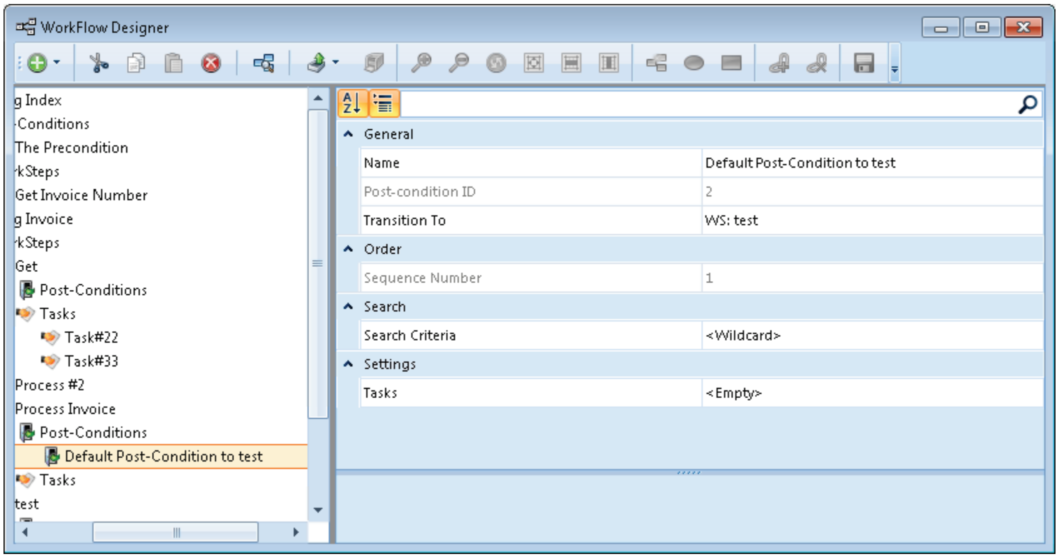
Note: The task will not be reordered in the left-hand column of the WorkFlow Definitions Properties screen.

Defining Workstep Post-Conditions

After you have graphically defined the worksteps and their flow, you can define post-conditions.

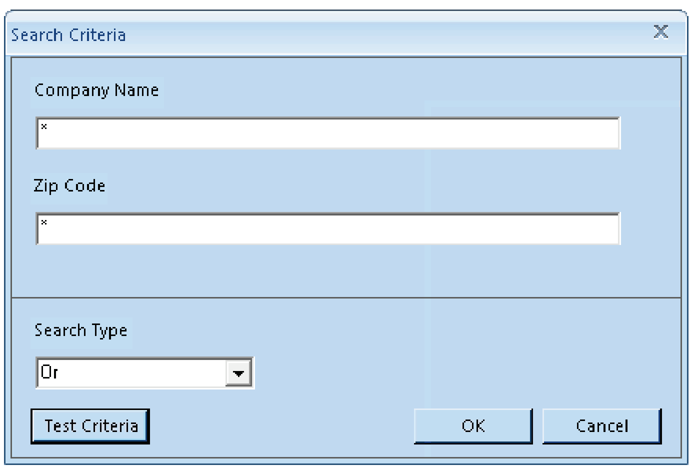
To define workstep post-conditions:

1. In the WorkFlow Designer screen, select the appropriate Workstep. The Workstep displays in the Grid view.



Post Condition View

2. If necessary, change the name of the post-condition.
3. If necessary, change the Transition to Workstep (WS) or WorkFlow (WF).
4. Enter the search criteria needed to complete the post condition. Click the **Search Criteria** field and then click the ellipse. The **Search Criteria** popup displays.

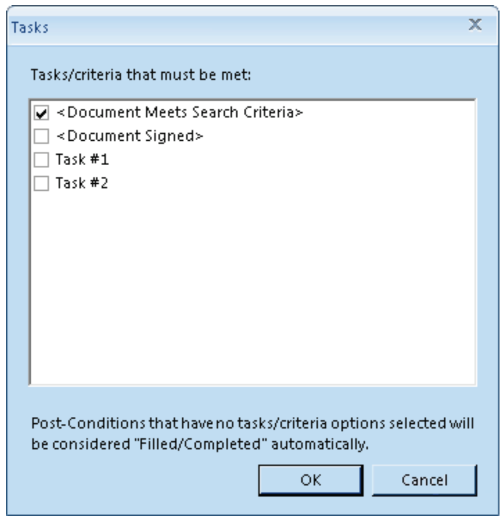


Search Criteria - Post Conditions

5. Enter the criteria that the document's index values will be required to meet, and then click **OK**.
6. Click the **Test Criteria** button to ensure the criteria entered is valid. PaperVision Enterprise will notify you if there are any errors.
7. Click **OK** to save the search criteria.

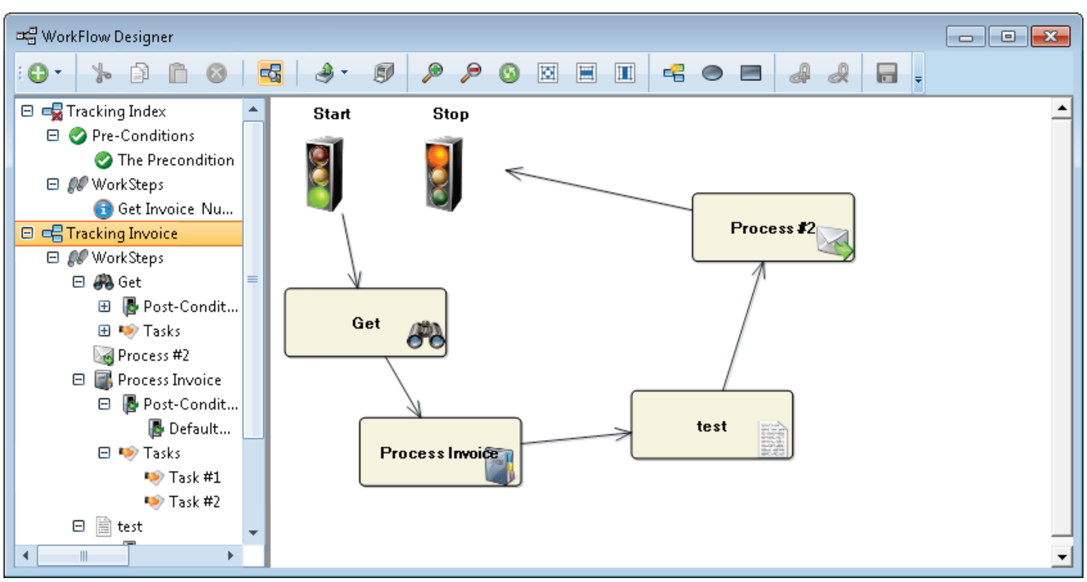
> **Note**: Default post-conditions have been created automatically for any links that have been defined to other Worksteps.

8. Enabling the <Document Signed> post-condition requires that the document be signed before the post-condition will be met.
9. Once a document has been signed, enable the <Document Signed> post condition to complete .
10. Select the **Tasks** field and then click the ellipse. The **Tasks** dialog box displays.



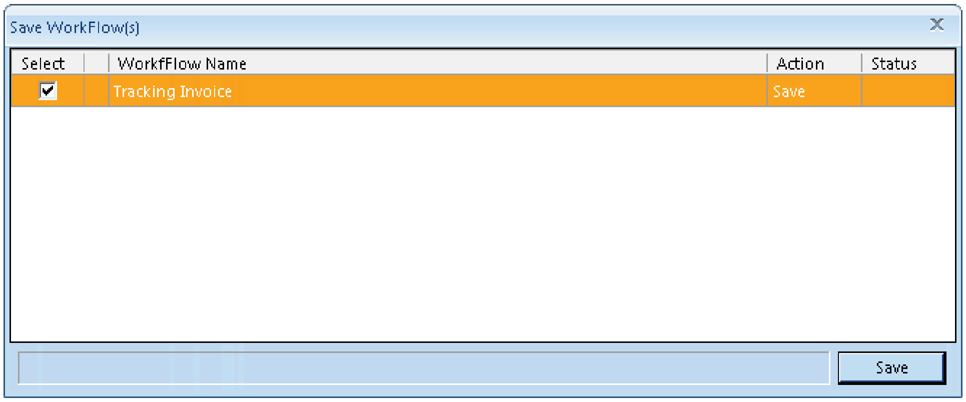
Post-Conditions - Tasks

11. Select a Task to be completed before the post condition can be started.
12. Once all of your Worksteps are completed, click **OK** to save your Workstep definitions to the WorkFlow definition. The **WorkFlow Designer** appears once again.



WorkFlow Definition Properties

13. Click the **Save** icon to save the WorkFlow. The Save WorkFlow(s) dialog displays.



Save WorkFlow(s) dialog

14. Select the WorkFlows to save, and then click **Save**.
15. Click **Finish** to close the Save WorkFlow(s) dialog.

Editing an Existing WorkFlow Definition

Modifications to WorkFlow definitions take effect immediately. When you delete a Workstep definition, it is immediately removed. Existing workstep instances can be processed, but no new Workstep instances for the deleted Workstep definition will be created. Modifications to Workstep tasks and post-conditions also propagate immediately throughout the system.

To edit an existing WorkFlow definition:

1. In the **WorkFlow Designer** screen, select the appropriate WorkFlow definition.
2. Click the **Active** field and then select True from the drop-down list.
3. Click the **Save** icon.
4. Click **Save**.
5. Click **Finish**.

Deactivating a WorkFlow Definition

Deactivating a WorkFlow definition stops any new WorkFlow instances from being created. All existing WorkFlow instances will continue to be processed. You can easily reactivate a WorkFlow definition by repeating this procedure and selecting the **Active** from the drop-down list.

To deactivate a WorkFlow definition:

1. In the **WorkFlow Designer** screen, select the appropriate WorkFlow definition.

2. Click the **Active** field and then select False from the drop-down list.
3. Click the **Save** icon.
4. Click **Save**
5. Click **Finish**.

Deleting a WorkFlow Definition

Deleting WorkFlow definitions immediately deletes not only the definition, but all WorkFlow instances (completed and in-progress) and all Workstep instances associated with the WorkFlow definition. WorkFlow history and status for the deleted WorkFlow will no longer be available; however, archived WorkFlow history reports will still exist if they were created.

To delete a WorkFlow definition:

1. In the **WorkFlow Definitions** screen, highlight the appropriate WorkFlow definition, and then click the **Delete** con.
2. Click **Yes** to confirm the deletion. The WorkFlow definition and all associated WorkFlow and Workstep instances will be deleted.

Exporting a WorkFlow Definition

PaperVision Enterprise includes the ability to export WorkFlow definitions. The export creates an XML document describing the WorkFlow definition, including pre-conditions, tasks, and post-conditions.

To export a WorkFlow definition:

1. In the **WorkFlow Designer** screen, open the appropriate WorkFlow definition.
2. Click the **Export** icon and then select the type of export to perform.
3. Navigate to the directory in which the WorkFlow Definition will be saved.
4. Click **Save**.

Importing a WorkFlow Definition

PaperVision Enterprise includes the ability to import a WorkFlow definition that was previously exported. The import process will import all of the WorkFlow definition except any notification groups or workstep participants. The reason for this is that the assigned group ID on the system that exported the definition will not necessarily match the group ID on the system importing the definition.

To import a WorkFlow definition:

1. In the **WorkFlow Defintions** screen, click the **Import** icon.
2. In the **Import WorkFlow Definition** dialog box, locate the directory containing the WorkFlow definition.

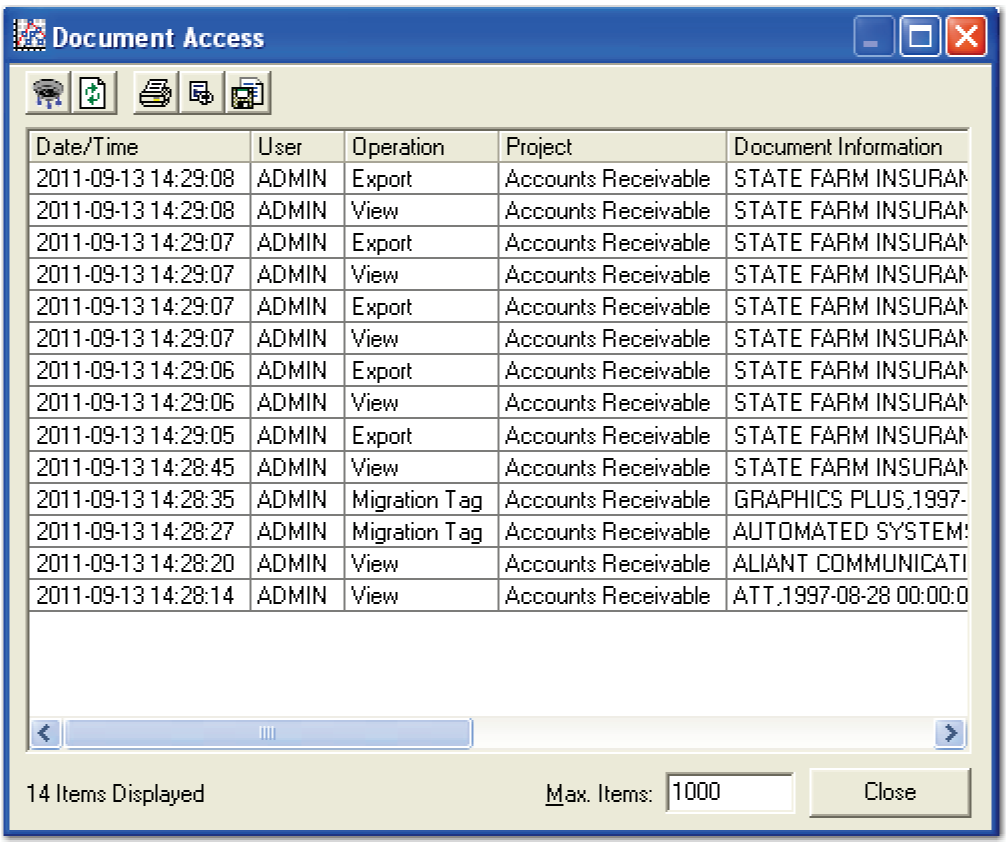
3. Select the XML file, and then click **Open**.
4. When the notification indicates the import was successful, click **OK**.
5. Edit the imported WorkFlow definition and assign the appropriate notification groups and participants for the worksteps.

Chapter 11 – Reports

PaperVision Enterprise provides extensive reporting features to allow administrators to perform detailed security audits, track user productivity and utilization, view the history of WorkFlows, manage the status of WorkFlows, and view records retention and destruction information.

Document Access

Document access reports provide detailed records of all documents that are accessed by a user (including which pages are accessed) and what operation the user performed while accessing those documents (i.e., print, fax, email, etc.).



Date/Time	User	Operation	Project	Document Information
2011-09-13 14:29:08	ADMIN	Export	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:08	ADMIN	View	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:07	ADMIN	Export	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:07	ADMIN	View	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:07	ADMIN	Export	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:07	ADMIN	View	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:06	ADMIN	Export	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:06	ADMIN	View	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:29:05	ADMIN	Export	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:28:45	ADMIN	View	Accounts Receivable	STATE FARM INSURAN
2011-09-13 14:28:35	ADMIN	Migration Tag	Accounts Receivable	GRAPHICS PLUS,1997-
2011-09-13 14:28:27	ADMIN	Migration Tag	Accounts Receivable	AUTOMATED SYSTEM
2011-09-13 14:28:20	ADMIN	View	Accounts Receivable	ALIANT COMMUNICATI
2011-09-13 14:28:14	ADMIN	View	Accounts Receivable	ATT,1997-08-28 00:00:0

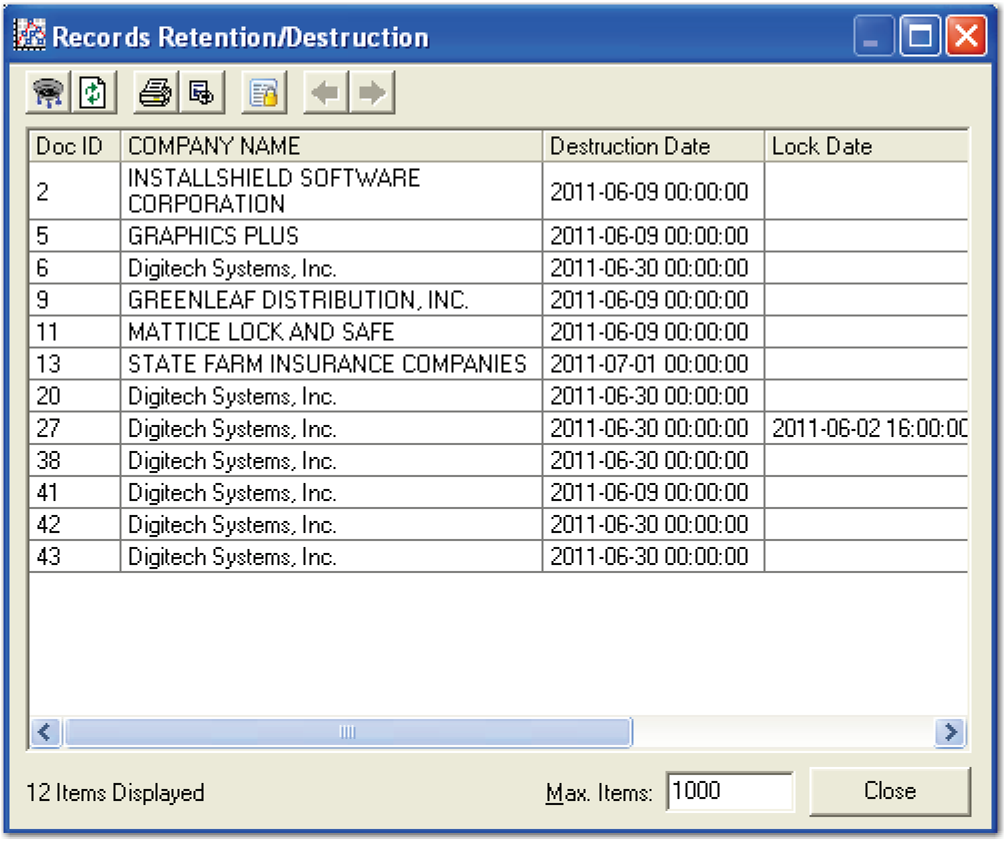
Document Access Report

Document access reports include the following information:

- Date/Time the operation was performed
- User performing the action
- Operation being performed (i.e. print, fax, view)
- The project the operation was performed in
- Document index values for the document the operation was performed on
- Page range the operation was performed on
- Disclosure recipient (if using enhanced auditing)
- Disclosure Reason (if using enhanced auditing)
- Disclosure Notes (if using enhanced auditing)
- Source IP address or computer name the operation was performed from

Records Retention/Destruction

Records Retention/Destruction reports provide information pertaining to the retention (lock) and destruction dates of documents within a project. Archiving is not available as the report is a representation of live data, not historical data.



Doc ID	COMPANY NAME	Destruction Date	Lock Date
2	INSTALLSHIELD SOFTWARE CORPORATION	2011-06-09 00:00:00	
5	GRAPHICS PLUS	2011-06-09 00:00:00	
6	Digitech Systems, Inc.	2011-06-30 00:00:00	
9	GREENLEAF DISTRIBUTION, INC.	2011-06-09 00:00:00	
11	MATTICE LOCK AND SAFE	2011-06-09 00:00:00	
13	STATE FARM INSURANCE COMPANIES	2011-07-01 00:00:00	
20	Digitech Systems, Inc.	2011-06-30 00:00:00	
27	Digitech Systems, Inc.	2011-06-30 00:00:00	2011-06-02 16:00:0C
38	Digitech Systems, Inc.	2011-06-30 00:00:00	
41	Digitech Systems, Inc.	2011-06-09 00:00:00	
42	Digitech Systems, Inc.	2011-06-30 00:00:00	
43	Digitech Systems, Inc.	2011-06-30 00:00:00	

Records Retention/Destruction Report

Records Retention/Destruction reports include the following information:

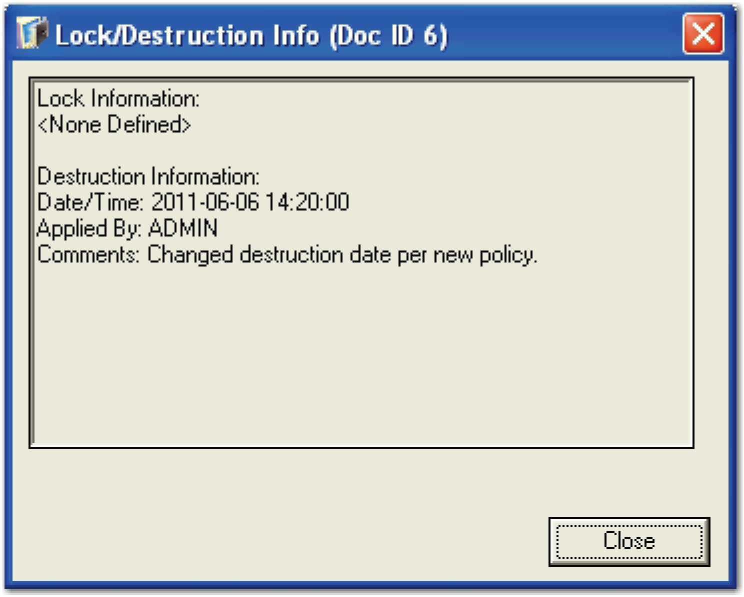
- Document ID
- Document Index Fields
- Retention/Lock Date
- Destruction Date

You can navigate through groups of documents by using the **Next** and **Previous** buttons.

Viewing a Document's Lock/Destruction Information:

Within the Records Retention/Destruction report, you can view a document's lock and destruction information, including who/what applied the date and any comments made during the application.

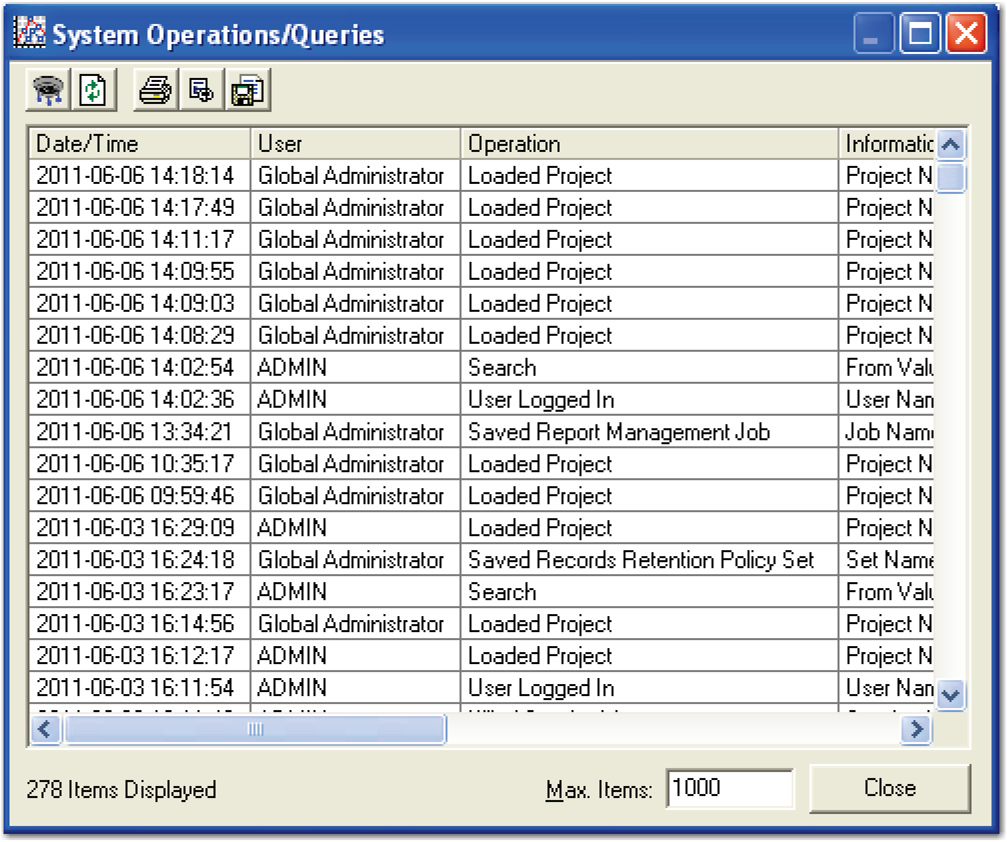
To view the report, select an item in the report, and then click the **Lock/Destruction Info** icon. The **Lock/Destruction Info** screen is displayed.



Lock/Destruction Info

System Operations/Queries

System operations/queries reports provide detailed records of all system operations that have been performed, including password changes, access to projects, and queries executed.



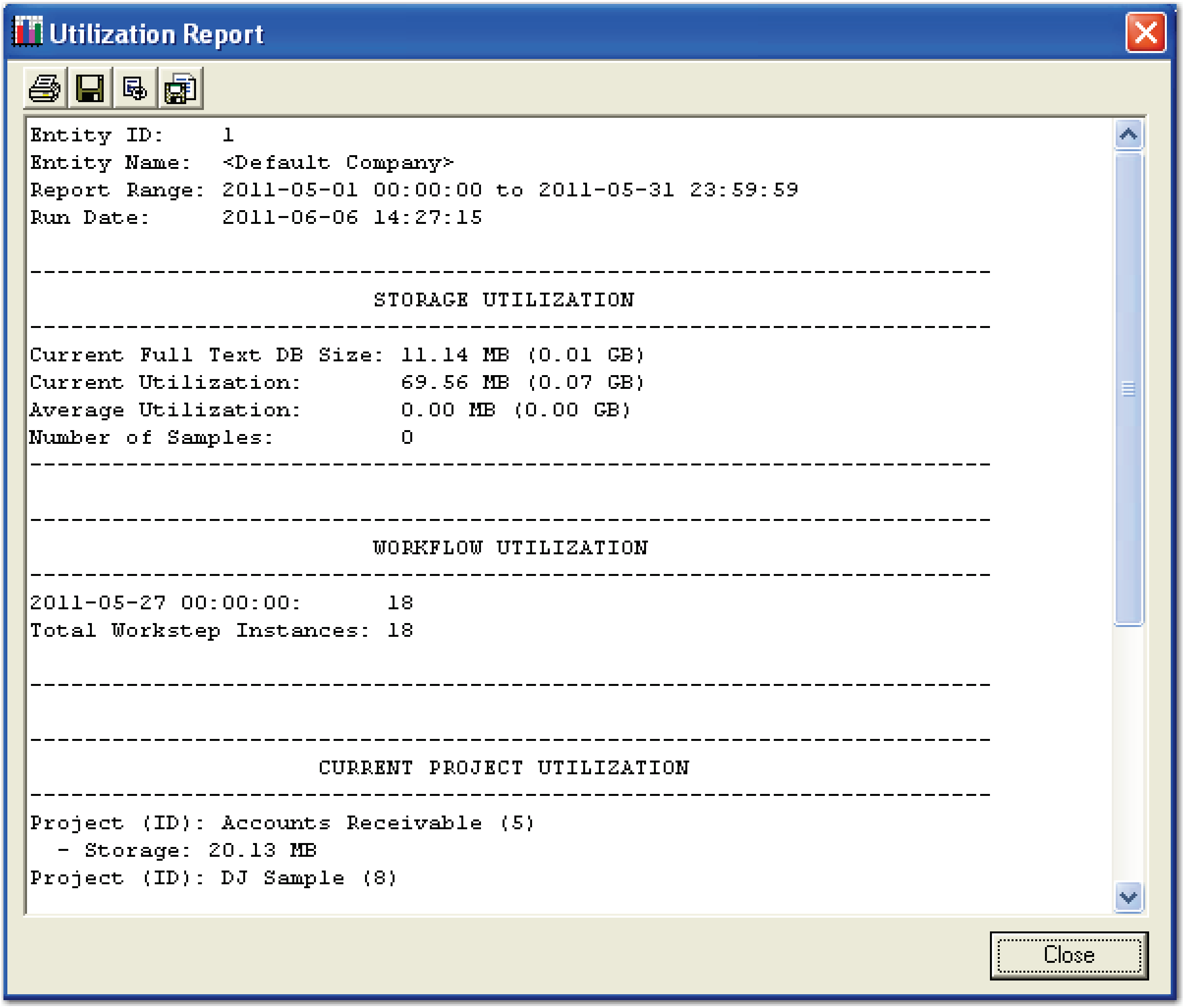
System Operations/Queries Report

System operations/queries reports include the following information:

- Date/Time the operation was performed
- User performing the operation
- Operation being performed (i.e. Search, Logged In)
- Information pertaining to the operation
- Source IP address or computer name the operation was performed from

Utilization

Utilization reports provide summary totals for operations such as pages viewed, printed, and faxed, which is grouped by user. They also provide storage utilization reports, as well as document, page, and storage totals per project.




```
Entity ID:     1
Entity Name:   <Default Company>
Report Range:  2011-05-01 00:00:00 to 2011-05-31 23:59:59
Run Date:      2011-06-06 14:27:15

----------------------------------------------------------------------
                         STORAGE UTILIZATION
----------------------------------------------------------------------
Current Full Text DB Size: 11.14 MB (0.01 GB)
Current Utilization:       69.56 MB (0.07 GB)
Average Utilization:       0.00 MB (0.00 GB)
Number of Samples:         0
----------------------------------------------------------------------


----------------------------------------------------------------------
                         WORKFLOW UTILIZATION
----------------------------------------------------------------------
2011-05-27 00:00:00:      18
Total Workstep Instances: 18

----------------------------------------------------------------------


----------------------------------------------------------------------
                     CURRENT PROJECT UTILIZATION
----------------------------------------------------------------------
Project (ID): Accounts Receivable (5)
  - Storage: 20.13 MB
Project (ID): DJ Sample (8)
```

Utilization Report

Utilization reports include the following information:

- Number of pages viewed, printed, and emailed (additional operations are available with the archived data for this report) by each user

  > **Note**:
  >
  > This information is only included if enabled in the Entity Properties.

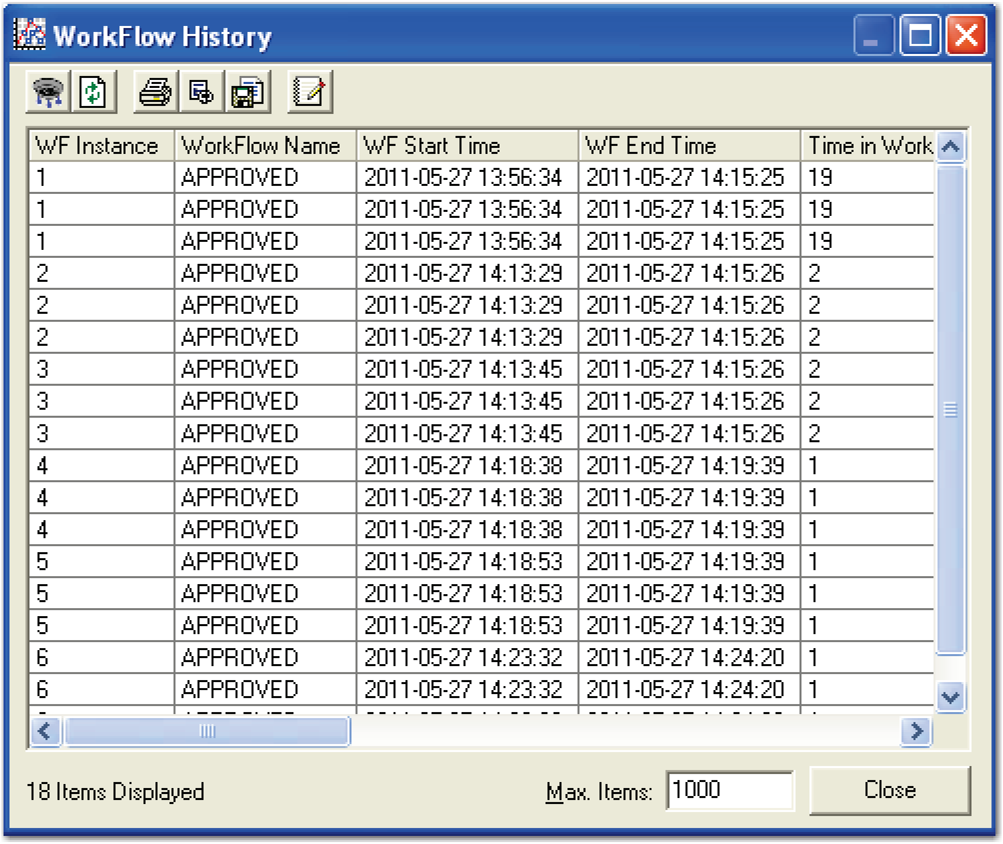
- Current storage utilization (including storage space utilized by any full-text databases)
- Average utilization over a series of samples (snapshots recording the current amount of storage in use at a specified time as defined by the global administrator)
- Number of Documents and Pages within each project

  > **Note**:
  >
  > This information is only included if enabled in the Entity Properties.

- Number of WorkFlow instances completed on each day of the report period

WorkFlow History

WorkFlow history reports contain information pertaining to completed WorkFlow instances and all of their associated workstep instances, individually.



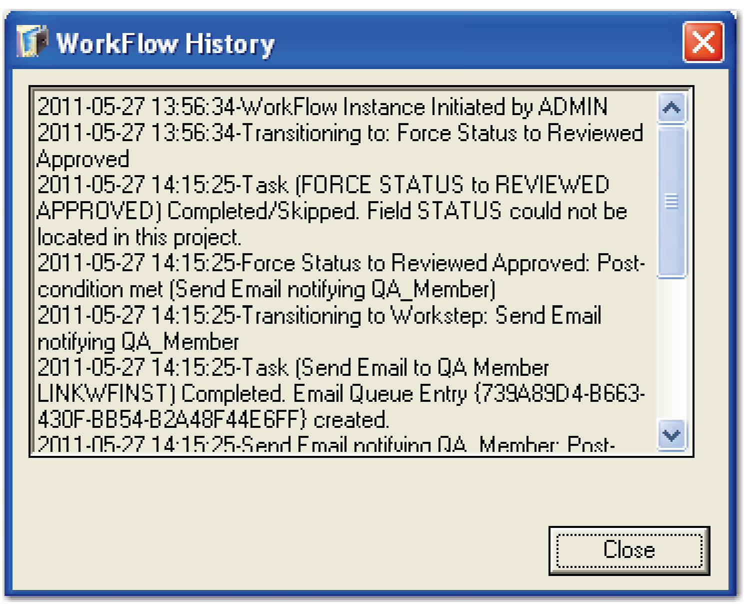
WorkFlow History Report

WorkFlow history reports include the following information:

- WorkFlow instance ID
- WorkFlow name
- WorkFlow instance start time
- WorkFlow instance end time
- Length of time it took the WorkFlow instance to be completed (in minutes)
- Workstep instance ID
- Workstep name
- Workstep instance start time
- Workstep instance end time
- Length of time it took the workstep instance to be completed (in minutes)
- Name of the owner who completed the workstep instance
- When a specific WorkFlow or Workstep is used as a filter value, the report will also include any available information pertaining to the document associated with each item in the report.
- Document ID

Viewing the WorkFlow History of a WorkFlow Instance

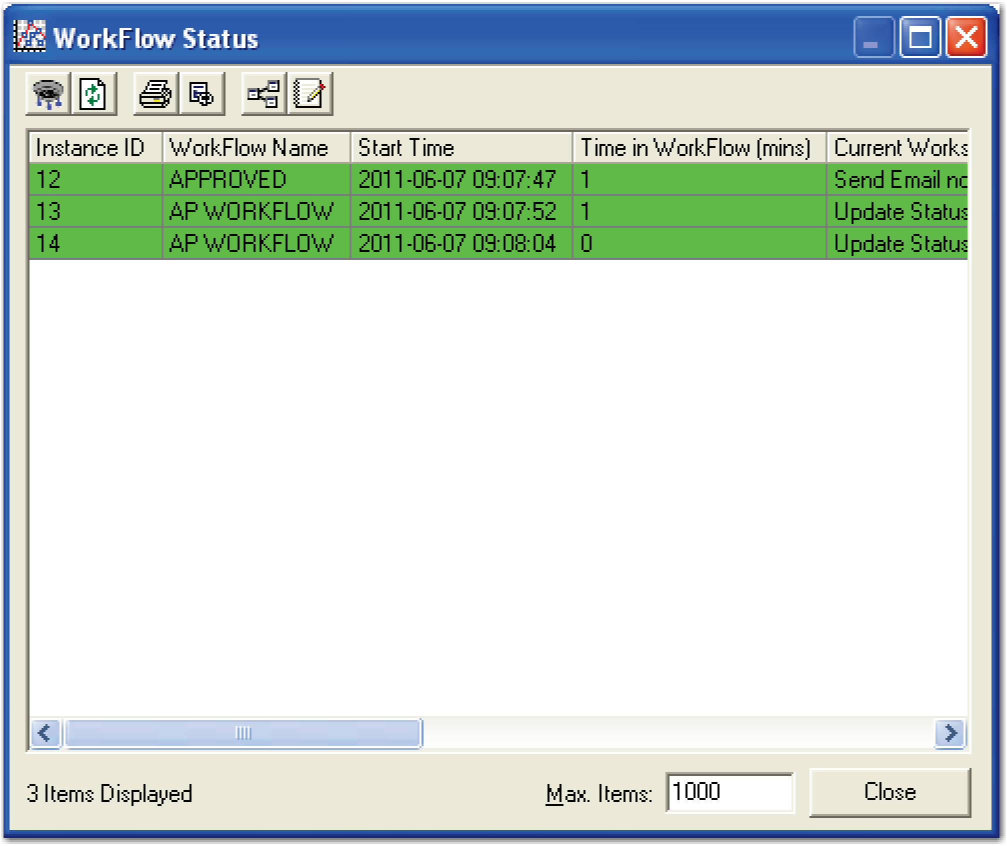
Within WorkFlow History reports, you can view the compiled history of the entire WorkFlow. Select an item in the report and click the **WorkFlow History** icon. The **WorkFlow History** dialog box appears.



WorkFlow History

WorkFlow Status

WorkFlow status reports provide information pertaining to the state of active WorkFlow instances. Archiving is not available as WorkFlow status is a representation of live data, not historical data.



WorkFlow Status Report

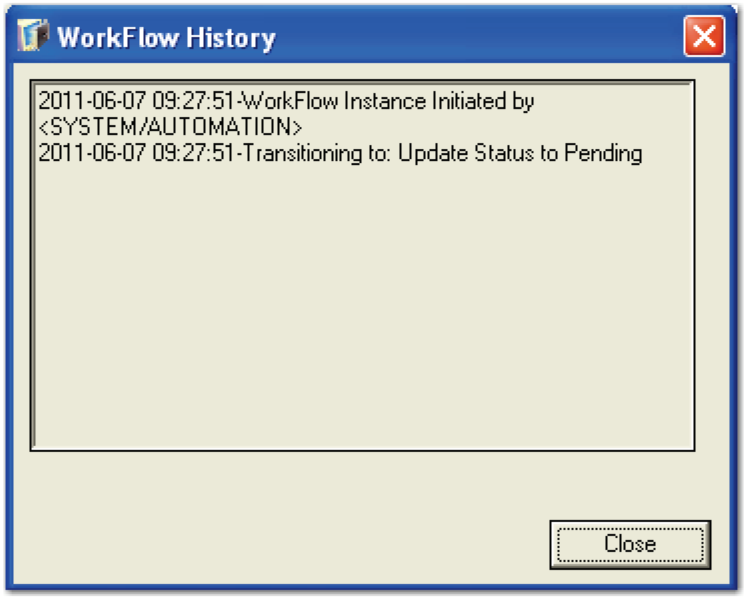
WorkFlow status reports include the following information:

- WorkFlow Instance ID
- WorkFlow name
- WorkFlow instance start time
- Length of time the WorkFlow instance has been active/uncompleted (in minutes)
- Current workstep for the WorkFlow
- Current workstep instance start time
- Length of time the workstep instance has been active/uncompleted (in minutes)
- Owner of the current workstep instance

When a specific WorkFlow or Workstep is used as a filter value, the report will also include any available information pertaining to the document associated with each item in the report.

Viewing the History of a WorkFlow Instance

WorkFlow Status reports allow you to view the compiled history of the entire WorkFlow, up to the current, active state. Select an item in the report, and then click the **WorkFlow History**  icon. The **WorkFlow History** dialog box appears.

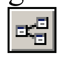


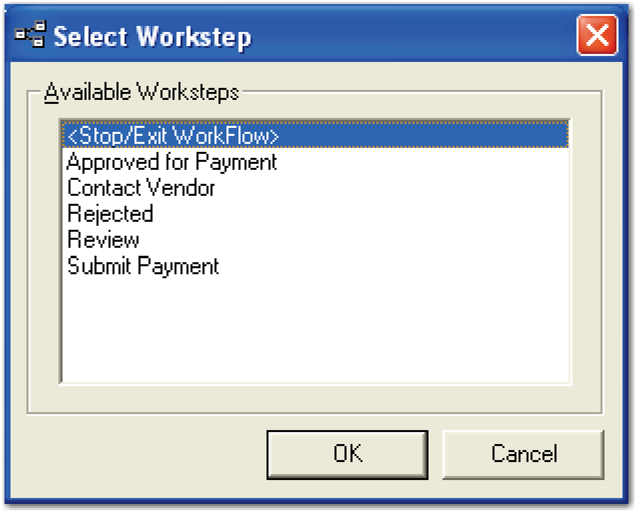
WorkFlow History

Moving/Transitioning a WorkFlow to a Specific Workstep

System and WorkFlow administrators can take an active WorkFlow instance and transition it to a specific workstep (regardless of the current state of the WorkFlow). In the case where an owner of a workstep instance is no longer with a company, the administrator can move the WorkFlow instance back to the same (current) workstep as an unowned workstep or move it to an entirely different workstep in the WorkFlow.

To move a WorkFlow instance to a new workstep:

1. In the **WorkFlow Status** dialog box, select the appropriate WorkFlows, and then select the **Move to Workstep**  icon. The **Select Workstep** dialog box appears.

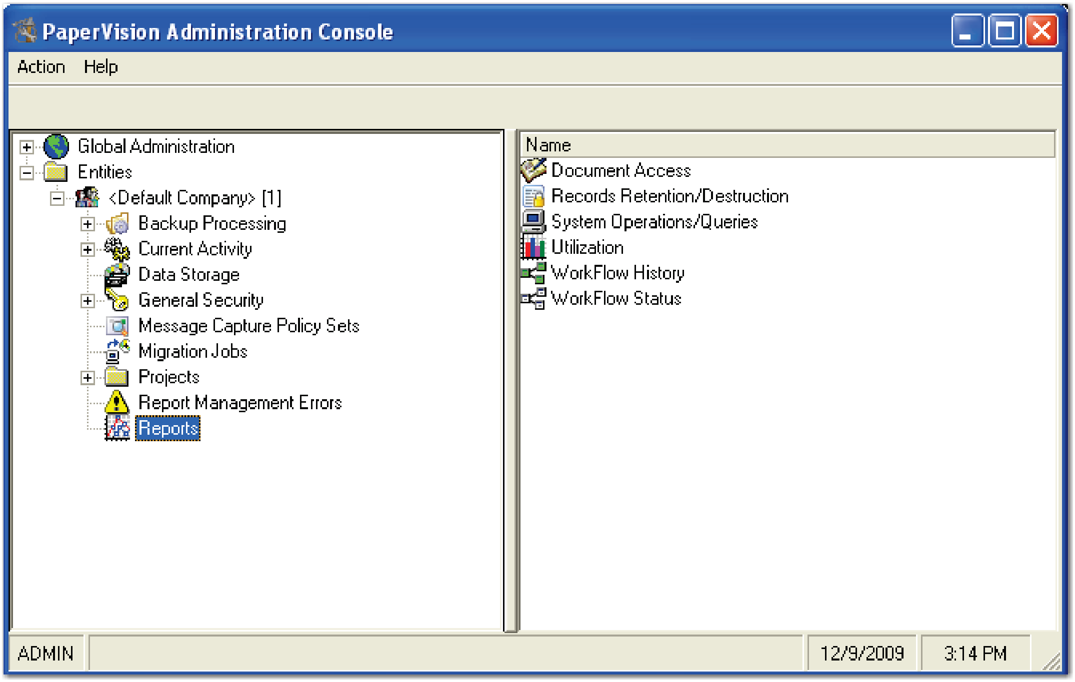


Select Workstep

2. Select the workstep to which the WorkFlow will be transitioned, and then click **OK**.
3. Click **Yes** to confirm the transitioning of the WorkFlow instances. The current worksteps will be marked as completed (administratively) and the new workstep instance will be created.

Viewing Reports

To view Document Access, System Operations/Queries, WorkFlow History, and WorkFlow Status reports, select the appropriate entity, and then expand **Reports**. The **Reports** screen appears.

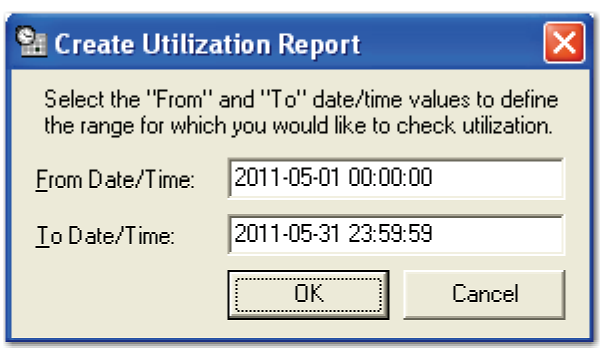


Reports

To view a report, double-click on the appropriate report, and it will be created and displayed. By default, reports are limited to the first 1000 items. You can increase or decrease this limit by changing the **Max Items** value in the report view.

To view utilization reports:

1. In the **Reports** screen, double-click on **Utilization**. The **Create Utilization Report** dialog box appears.



Create Utilization Report

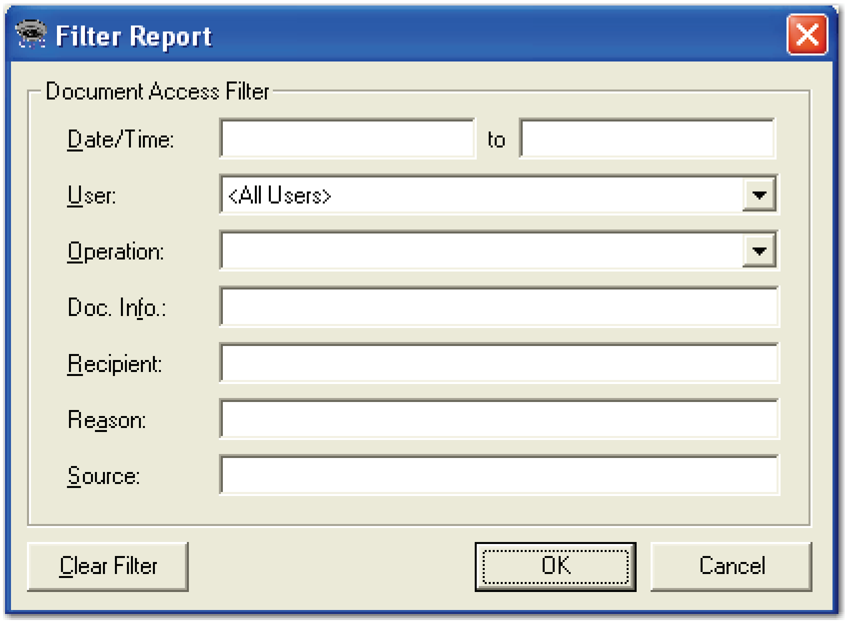
2. Enter the date/time range, and then click **OK**.

Filtering Reports

You can filter most reports to quickly locate data based on specific criteria. Filtering is available on all reports except utilization reports (since filtering is not applicable to utilization reports).

To filter a report:

1. While viewing a report, click the **Filter Report**  icon. The **Filter Report** dialog box appears.



Document Access Report Filter

> **Note**:
>
> The available filters depend on the type of report you are filtering.

2. Enter the values to search for (or, click **Clear Filter** to remove all filters).

> **Note**:
>
> If you enter values for multiple items, the filter will locate only items that meet all of your criteria.

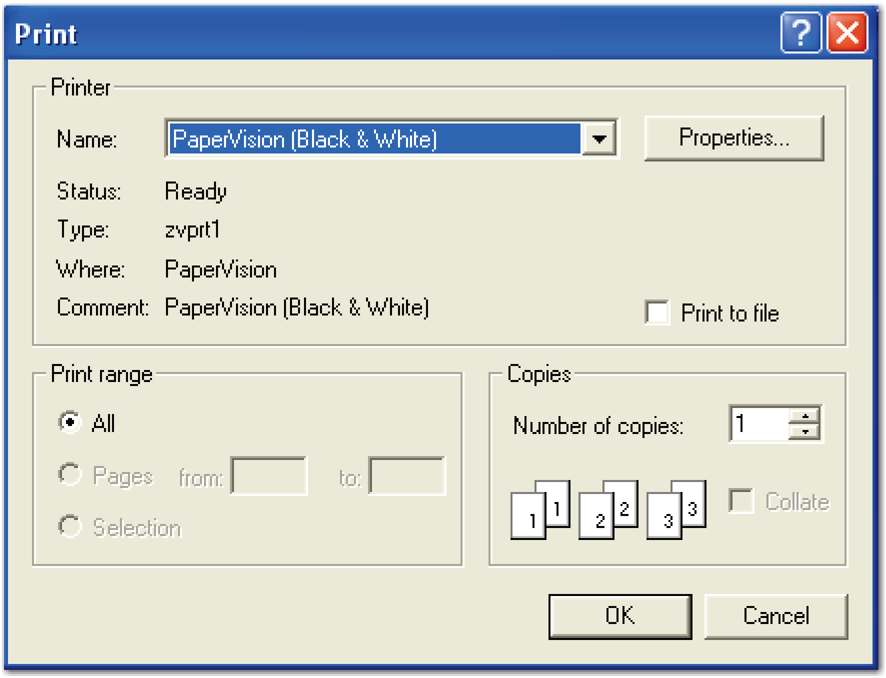
3. Click **OK** to run the report.

Printing Reports

Reports are printed exactly as they appear on the screen.

To print a report:

1. While viewing a report, select the **Print Entire Report**  icon. The Windows **Print** dialog box appears.



Print

2. Select the printing parameters, and then click **OK**.

Exporting Reports

Exporting reports creates an XML representation of the report. This is useful for data analysis tasks as XML lends itself to being manipulated for that type of task.

To export a report:

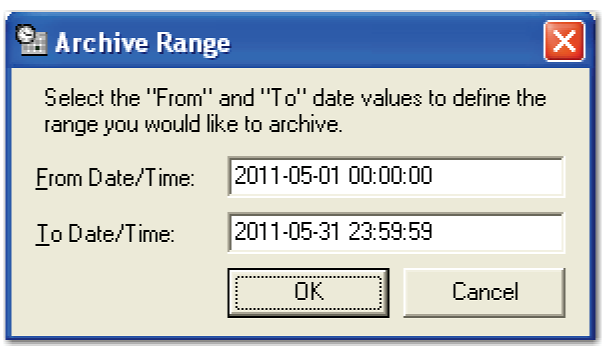
1. While viewing a report, select the report items to export.
2. Click the **Export Selection** icon.
3. In the **Export Report** dialog box, locate the directory where the export will be written.
4. Enter the file name for the export.
5. Click **Save**. A message will notify you where the export will be written.

Archiving a Report Range

Archives provide administrators a simple way to free up database space, while maintaining data to be reviewed at a later time. When an archive is created, an XML document is created with all of the report data for the specified date range. Then the data that has been archived is removed from the active system. Archives are not available for WorkFlow status and records retention/destruction reports since they represent actual live data.

To archive a report:

1. While viewing a report, select the **Archive Range** icon. The **Archive Range** dialog box appears.



Archive Range

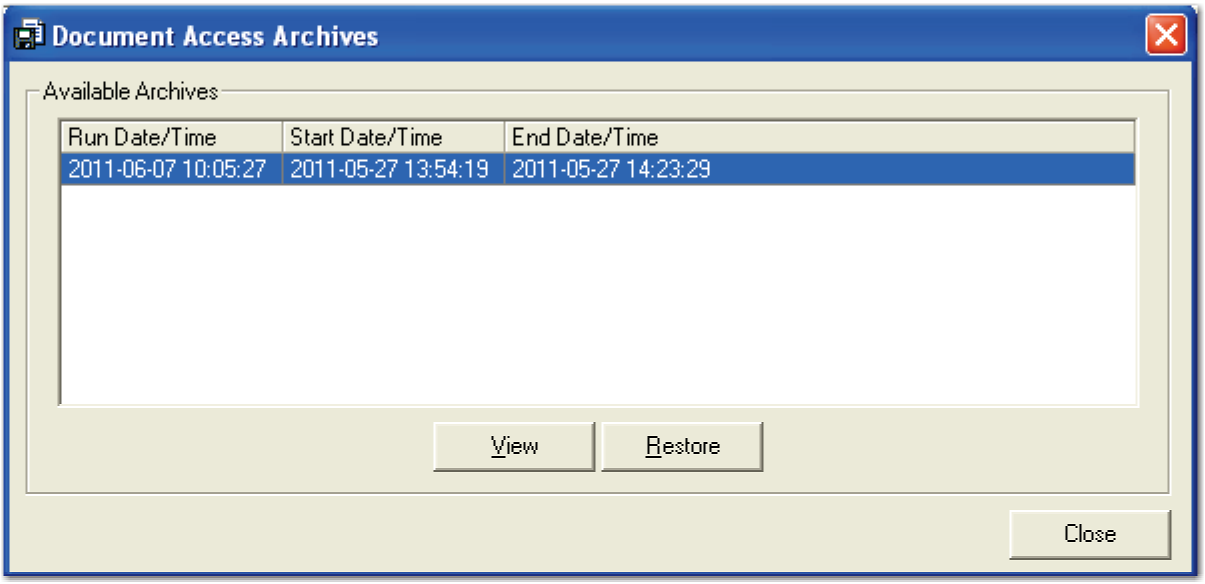
2. Enter the date/time ranges, and then click **OK**. You will be prompted to ensure you want to archive the selected range.
3. Select **Yes** to archive the items. PaperVision Enterprise will archive the requested items and then run your displayed report again.

Archives

As described earlier, archives are available for all reports except the WorkFlow Status report and the Records Retention/Destruction report as both of these reports represent live data. System operations/queries and document access archives can be restored back into the database.

To view a report's archives:

1. Select the appropriate entity, and then expand **Reports**.
2. In the **Reports** screen, select the appropriate report, and then click the **Archives**  icon. The report's **Archives** dialog box appears.



Document Access Archives

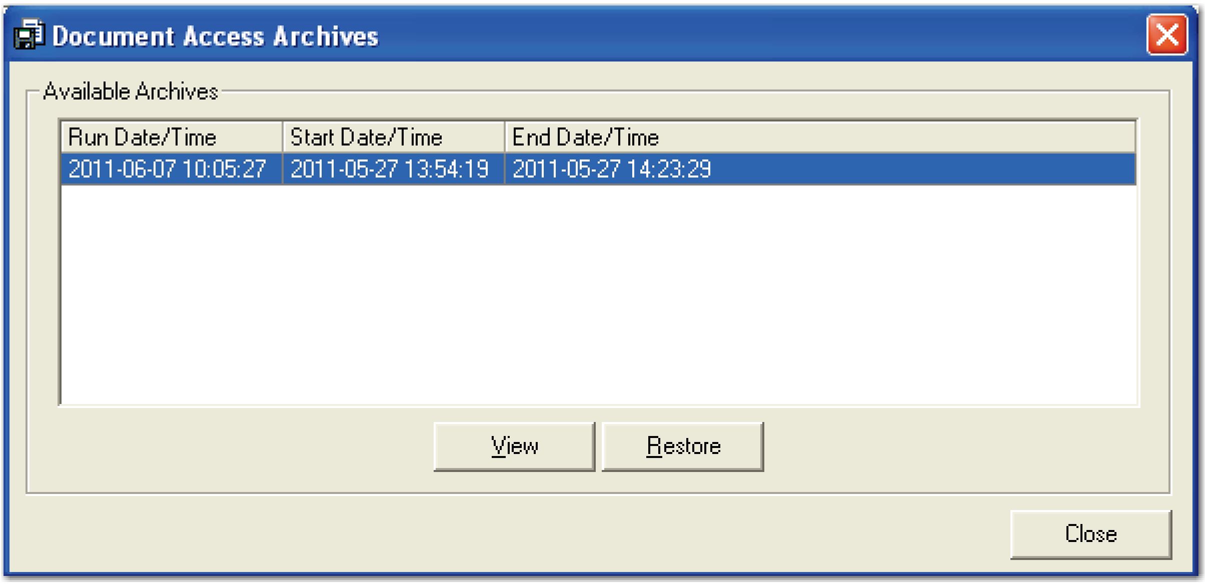
3. Select the archive, and then click the **View** button. The archive will be extracted to your local hard disk and then displayed.

Restoring Archives

Archives from the system operations/queries and document access reports can be restored back into the database as desired.

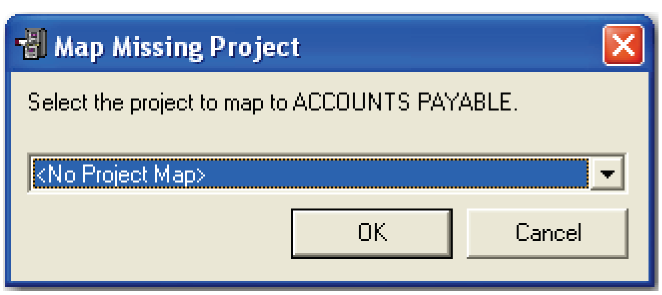
To restore report archives:

1. Select the appropriate entity, and then expand **Reports**.
2. In the **Reports** screen, select the report whose archives should be restored, and then click the **Archives** icon. The report's **Archives** screen appears.



Archives

3. Select the archives, and the click the **Restore** button.
4. You will be warned that the archive will be permanently deleted once it has been successfully restored. Click **Yes** to continue with the restore operation and subsequent deletion.
5. If you are restoring document access archives, the system will first scan the archives being restored to ensure that all of the projects in the archives still exist under the same name (as when the archive was created). If projects have been renamed or deleted, you will be prompted to select an existing project to map the entries into.



Map Missing Project

6. Select the project map (or, select **<No Project Map>**), and then click **OK**.

The project mappings are automatically saved to the local **\Digitech Systems\Common Files\PVDM.INI** file where PaperVision Enterprise was installed, so you will not have to remap the project every time you attempt to restore archives. Once all of the project mappings have been determined, the archives will be restored.

Note:

If the PVDM.INI file is edited after viewing a document and the edit affects the Brower-Based Viewer (such as adding/editing the redirect statement), IIS must be restarted to ensure the browser-based viewer detects the change.

Appendix A – Additional Help Resources

At Digitech Systems, we provide multiple resources to help find answers to your questions.

Technical Support

Contact our legendary customer support staff Monday through Friday between the hours of 8 a.m. and 6 p.m. Central Time for answers to your questions about our products.

Direct: (402)484-7777

Toll-free: (877)374-3569

Email: **support@digitechsystems.com**

Help on the Web

MyDSI is an interactive tool for all Digitech Systems customers. Log in to **http://mydsi.digitechsystems.com** to download product updates, license purchased software, view support contract renewals, and check the status of your software support cases and requests.

User Forums

Log in to **http://forums.digitechsystems.com** to exchange answers and ideas with other users in our moderated community.

Knowledge Base

Log in to **http://kb.digitechsystems.com** to search our extensive Knowledge Base for articles on all Digitech Systems products.

Appendix B – Ensuring Scalability, Reliability, and Security

A great deal of effort has been taken to create a system capable of addressing the scalability, reliability, and security needs of the largest of enterprises, as well as Application Service Providers who are hosting PaperVision Enterprise for thousands of enterprises.

Scalability and Reliability

PaperVision Enterprise uses a number of techniques in order to provide an unprecedented level of reliability and to allow PaperVision Enterprise to scale to an unlimited number of simultaneous users.

Load-Balancing

PaperVision Enterprise servers (both web and application) can sit behind load balancers with little, if any, configuration specific to PaperVision Enterprise. In fact, PaperVision Enterprise can also be used with Microsoft Windows built-in NLB (network load balancing). Load balancing allows an application to run on multiple servers that share the load, providing scalability and reliability. The scalability comes from being able to run on multiple servers at the same time and share information amongst the servers. If a server gets bogged down, the other servers can take up the slack. The reliability comes from the ability of a user to hit a different server if one goes down (quite often without the user even knowing they were redirected to another server).

Now, many applications can be load balanced across multiple servers. PaperVision Enterprise is unique in the way that it handles its operations, allowing it to be scaled to an unlimited number of servers. Each new server can incrementally add more processing power WITHOUT reaching a point of diminishing returns (assuming the rest of your environment is designed properly, including network, storage, etc).

No Use of IIS Sessions

PaperVision Enterprise's web applications, as well as its web services, are completely free from IIS sessions. In other words, an administrator could completely disable sessions on their IIS server and take advantage of the performance gains made by running IIS without the use of sessions mode.

Rather than using IIS sessions, PaperVision Enterprise uses its own session architecture.

1. When a user logs into PaperVision Enterprise, a session identifier (session ID) is created. The user's credentials and access (state information) are stored in the database, referenced by this session ID. The session ID is encrypted and then passed back to the user's computer.
2. Every time the user performs an operation, such as searching, not only is the information pertaining to that search passed back to the server, but the user's encrypted session ID is passed back to the server. Depending on the type of operation being performed, the session's state information may be updated.
3. When the user logs out of the system, this session ID and its state information are destroyed.

PaperVision Enterprise's session architecture not only provides a significant performance improvement (over user IIS sessions) for individual web and application servers, but it also allows a load-balanced system to completely disregard any need for persistence. For example:

> Tom logs into PaperVision using Web Server A, executes a query using Web Server B, and retrieves a document from Web Server C – all the while never being aware that he is hitting multiple servers (other than, of course, the blazingly fast response time). If any of the servers actually went down, Tom would not be aware of it as the load balancing automatically redirected him to another server.

Another benefit is that adding additional servers does not increase overhead for the existing systems since there is no session or state communication which must take place between the web and application servers.

Web Services

PaperVision makes extensive use of web services. This allows communications between the web server and application servers (if using Process Redirection) or client workstations and the web/application servers to be handled over standard http (or https) traffic. Using this, you can implement load balancing for second-tier application servers that are being accessed by the web servers or the client workstations to provide additional scalability and reliability (if using a group of application servers).

Furthermore, PaperVision's web services have been engineered to minimize the number of round trips that must be made between computers, greatly reducing the amount of network traffic generated by the system. A round trip is made every time one computer communicates with another. In order to minimize the number of round trips taken, PaperVision groups operations into a single communication, returning all of the information to the requesting computer before it was even aware that it needed the additional information.

Process Redirection

PaperVision Enterprise's redirection feature allows a web server (or even a second or third tier application server) to redirect all of its processing to a separate "application tier" of servers. As such, a web server can concentrate on generating web pages, offloading all of its processing of the PaperVision application to a separate server (or group of servers to provide reliability).

Automation Service

The PaperVision Automation Service performs a number of automated tasks, including importing data, processing WorkFlow items, and performing security operations. The automation service can be run on multiple computers to provide scalability and reliability.

Database Scaling

By now, we have eliminated the web server/application server bottleneck in a high-availability/high-scalability system. Generally speaking, the other external systems that are still an integral part of the PaperVision Enterprise system, such as network and storage can be appropriately scaled using readily available technology. However, the database server can become a bottleneck when handling requests for thousands of simultaneous users (and we need to scale to billions to meet our "unlimited scalability" claim). Sure, you can create clusters of database servers and even add processors (however, at the time of this writing, Microsoft SQL Server does NOT offer active-active clustering so adding machines to a SQL cluster only increases availability, not scalability).

PaperVision Enterprise's solution lies in its ability to place entities in separate physical databases (that may be spread out across separate servers). You could place all of the entities in a single database on a single server, split them across multiple databases on a single (or multiple) servers, or you could even place each entity on its own database in its own database cluster. PaperVision Enterprise's administration tools (as well as the end-user application) handle all of the complexity of managing multiple databases. All administration is handled in the Administration Console and, other than telling the system to create the new entity in a different database, you never have to worry about which entity is on which database – PaperVision Enterprise keeps track of it all and redirects the requests to the correct database. The same goes for end-user applications – PaperVision Enterprise automatically routes all database lookups to the appropriate database server.

File Replication

PaperVision Enterprise includes the ability to perform file replication on documents and full text data in the system. Replication capabilities are included as a core component of PaperVision Enterprise. File replication allows all changes to the document files and full text databases to be replicated to another server and/or site for backup and high availability applications. You can replicate your data to as many separate locations as necessary, either locally or across WAN connections to separate sites.

Security

Great lengths have been taken to ensure the security of the PaperVision Enterprise system, whether it is being accessed directly through PaperVision Enterprise, PaperVision.net Enterprise or through a third-party application utilizing PaperVision Enterprise's APIs.

Session ID Encryption

Regardless of whether or not your site uses SSL (secure socket layers) for your web and application servers, PaperVision Enterprise encrypts the session ID that is passed back and forth between the clients and servers. This ensures that a session ID cannot be simply guessed to "hijack" another user's session.

Support for SSL and Non-Standard Ports

PaperVision Enterprise provides support for SSL (secure socket layers) and non-standard ports at both the web server and the application server levels. The use of SSL enables full encryption of ALL traffic (including documents) between the client applications and the servers (and even, if desired, the web servers and the application servers). The ability to use non-standard ports allows administrators to host multiple web applications under a single IP address. It also allows an administrator to make the communication between certain segments (i.e. between the web server and the application server) a little more obscure (although we never advocate security through obscurity).

Function-Level Verification

Every call that is made to PaperVision Enterprise that has anything to do with your account or information is verified for security access. This is even enforced at the lowest level APIs that are included with PaperVision Enterprise. This ensures that a hacker could NOT write an application using the PaperVision APIs that could access your information.

Session Source Persistence

PaperVision Enterprise offers administrators the ability to require all session activity to originate from the source of the original login. This ensures that someone cannot take over your session to gain access to your documents. When you log into PaperVision Enterprise, it tracks the IP address (or computer name) that was used to gain access. Every time you request information from the server, it checks to verify that your request originated from the same IP address (or computer name). If not, PaperVision Enterprise denies the request.

IP Address Limiting

PaperVision Enterprise offers administrators the ability to limit access to the repository to specific IP addresses or address ranges. This is helpful in ensuring that access can only be gained from specific locations.

Automatic Session Termination

PaperVision Enterprise offers the ability to have user sessions that have sat idle for too long to be automatically logged out of the system. This helps free up user licenses as well as assists in securing the system when somebody gets up and walks away from their desk while still logged in.

Web Services

As stated previously, PaperVision Enterprise makes extensive use of its own web services. This greatly enhances the security of the traffic that is used between web servers and application servers. By using web services all traffic is handled using standard http/https communication. Unlike many other communication methods (such as RPC, DCOM, etc), web services traffic running over http can be secured using SSL to fully encrypt all of that traffic. Furthermore, http/https traffic can, if desired, easily traverse a firewall, allowing you to place your web servers in your DMZ and place your application servers (which communicate with the databases and document stores) into a separate, secured network.

Data Segregation

PaperVision Enterprise's use of databases segregates all of the data for one entity from the data for a different entity. In a hosting environment, this is a key factor in ensuring that one entity cannot access another's data. A feature unique to PaperVision Enterprise is its ability to handle this segregated data (that may exist in separate physical databases or even on separate physical servers) from a centralized "Global Administration" console rather than requiring that each entity be managed from its own instance of an application.

Data Encryption

PaperVision Enterprise provides data encryption services using the industry standard AES-256 encryption algorithm. Administrators can define their own encryption keys/pass phrases and apply encryption to data within their security policy. This ensures that the raw data can never be accessed by unauthorized users.

Appendix C – System Architecture

PaperVision Enterprise derives great strength through its flexibility. It can be installed on a single, stand-alone workstation, or it can be distributed to tens of thousands (or more) users accessing the system from any location in the world.

SQL Server 2008 R2 Express Edition

Currently, SQL Server 2008 R2 Express Edition is included as an optional component during the PaperVision Enterprise installation from the DVD. This is an important component of Digitech Systems' product offering because our customers need not purchase Microsoft SQL Server in order to gain the benefits of client-server computing and scalability. And in the event you someday decide to upgrade to the full version of Microsoft SQL Server, the database transfers right over since SQL Server 2008 R2 Express Edition is Microsoft SQL Server (scaled-down). SQL Server 2008 R2 Express Edition is much more scalable than a system based on Access (or any other file-based database such as FoxPro). Since it can be installed on any current Microsoft operating system, you can decide whether to dedicate a database server, use a PaperVision workstation to also act as the database server for everyone or a group of users, or install a stand-alone workstation of PaperVision (with SQL Server 2008 R2 Express Edition serving only the workstation it is installed on).

While SQL Server 2008 R2 Express Edition "is a data engine built and based on core SQL Server technology", there are some differences between it and full-blown Microsoft SQL Server. The following are some of the more notable differences:

- SQL Server 2008 R2 Express Edition, when used for PaperVision, does NOT require any license purchases (for either the server or client access licenses).
- SQL Server 2008 R2 Express Edition supports databases with a maximum size of 10 GB. Most PaperVision users will be hard pressed to exceed this limit.
- SQL Server 2008 R2 Express Edition supports only one processor (with support for multi-core processors), up to 1 GB of RAM (used by SQL 2008 R2 Express Edition itself), and supports 32-bit and 64-bit operating systems.
- SQL Server 2008 R2 Express Edition has a governor that is designed to optimize its performance on the wide array of operating systems that can act as a database server. Based on our research, using an "average" workload, customers should be able to expect to run upwards of 100 PaperVision Enterprise concurrent users before having to consider an upgrade to the full Microsoft SQL Server product. Naturally, scalability will be determined by your workload and the hardware and software configuration of the machine that is acting as a PaperVision Database Server.

For additional information about Microsoft SQL Server 2008 R2 Express Edition, see Microsoft's web site: **http://www.microsoft.com/sqlserver/2008/en/us/express.aspx**

Automation Servers

PaperVision Enterprise's automation service performs the following tasks without any user intervention:

- Logs users out of the system who have been idle for too long
- Removes document grants that have expired
- Runs automated WorkFlow workstep instances
- Processes any workstep instances that have exceeded their Maximum Time restrictions
- Imports data groups
- Deletes data groups
- Takes storage utilization snapshots
- Compresses the full-text database

This service can be installed on either a single computer or on multiple computers. Each of the operations can be handled by multiple servers (i.e. have multiple servers importing data groups or processing automated workstep instances).

Additionally, the service supports the execution of multiple automation service processes on a single computer. In this scenario, each automation server process is specified in the MACHINENAME_INSTANCE format. With this feature, you can schedule one or multiple automated operations per server or instance. You can modify the number of automation services that can be run simultaneously by launching the PaperVision Configuration Utility, and changing the value in the **Simultaneous Processes** field. For more information on the PaperVision Configuration Utility, see the accompanying **PaperVision Enterprise Installation and Getting Started Guide**.

Web vs. Application Servers

This section explains the difference between web servers and application servers.

- Web Servers provide an interface for browser-based users to access PaperVision, whether that is over the Internet or the intranet. Web servers redirect all of their back-end processing to application servers.
- Application Servers offload the processing from web servers and client applications. Application servers perform database lookups, cache document files, etc.
- Web/Application Servers are simply servers that perform the duties of both web and application servers.

Technically, the difference between a PaperVision Enterprise web server and application server is very little. Both servers use Microsoft's IIS to either serve web pages or handle web services traffic. However, a web server (as opposed to a web/application server or an application server) will redirect all of its processing to a second server (or group of servers) to perform the back-end functions. Configuring a web server to use a separate application server is as easy as creating/modifying a single file on the web server. To do this, create a file in your **<Program Files>\Digitech Systems\Common Files**\ directory called **PVDM.INI**. In this file, place the following 2 lines of text:

[PVDM]

REDIRECTREQ=http://yourappserverhere/ (or https)

If your web server sits behind a load balancer or is being accessed via non-standard ports, you should also add the following line:

WEBURL=http://yourwebserverhere/ (or https)

Alternatively, you can insert the following line:

WEBURL=http://yourwebserverhere:676/ (where 676 is the non-standard port number)

Since the web server will never need to interact with the database, it is not necessary (nor recommended for security reasons) to start the PaperVision Enterprise Administration Console and connect to a database on the web server.

Note:

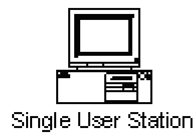
If the PVDM.INI file is edited after viewing a document and the edit affects the Brower-Based Viewer (such as adding/editing the redirect statement), IIS must be restarted to ensure the browser-based viewer detects the change.

System Design Scenarios

The single user, workgroup, department, and large enterprise system design scenarios are described in the following section.

Single User

The single user scenario exists where a single user will need to access PaperVision Enterprise. There may not even be a network of any kind.

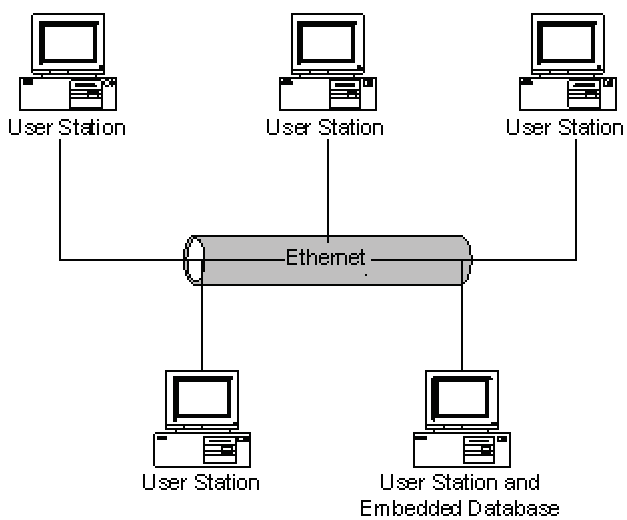


Single User

In this scenario, the single user station will house the SQL Server database, PaperVision Enterprise Administration Console, and PaperVision Enterprise Web Client all on the single user station.

Workgroup

In a workgroup (up to 20 users), all of the clients are accessing PaperVision Enterprise without a PaperVision server (other than a non-dedicated database).

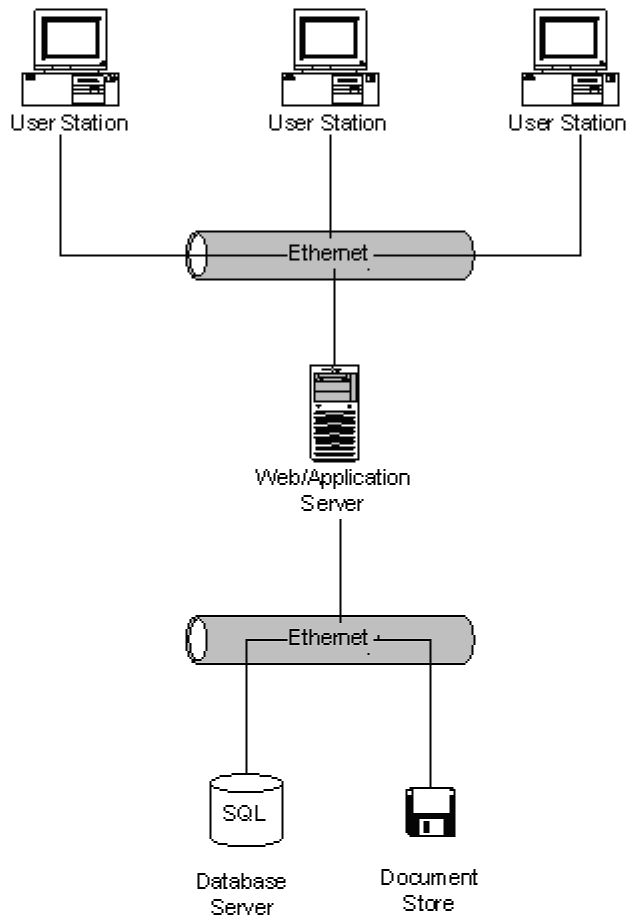


Workgroup

In a small workgroup each system only installs PaperVision Enterprise, with the exception of a single workstation also having the SQL Server database and Administration Console application installed. All of the other systems connect to the database workstation and interact with any document stores directly.

Department

In a department scenario (with hundreds of users), there may be users accessing the system via both the browser-based PaperVision.net Enterprise and the PaperVision Enterprise applications.

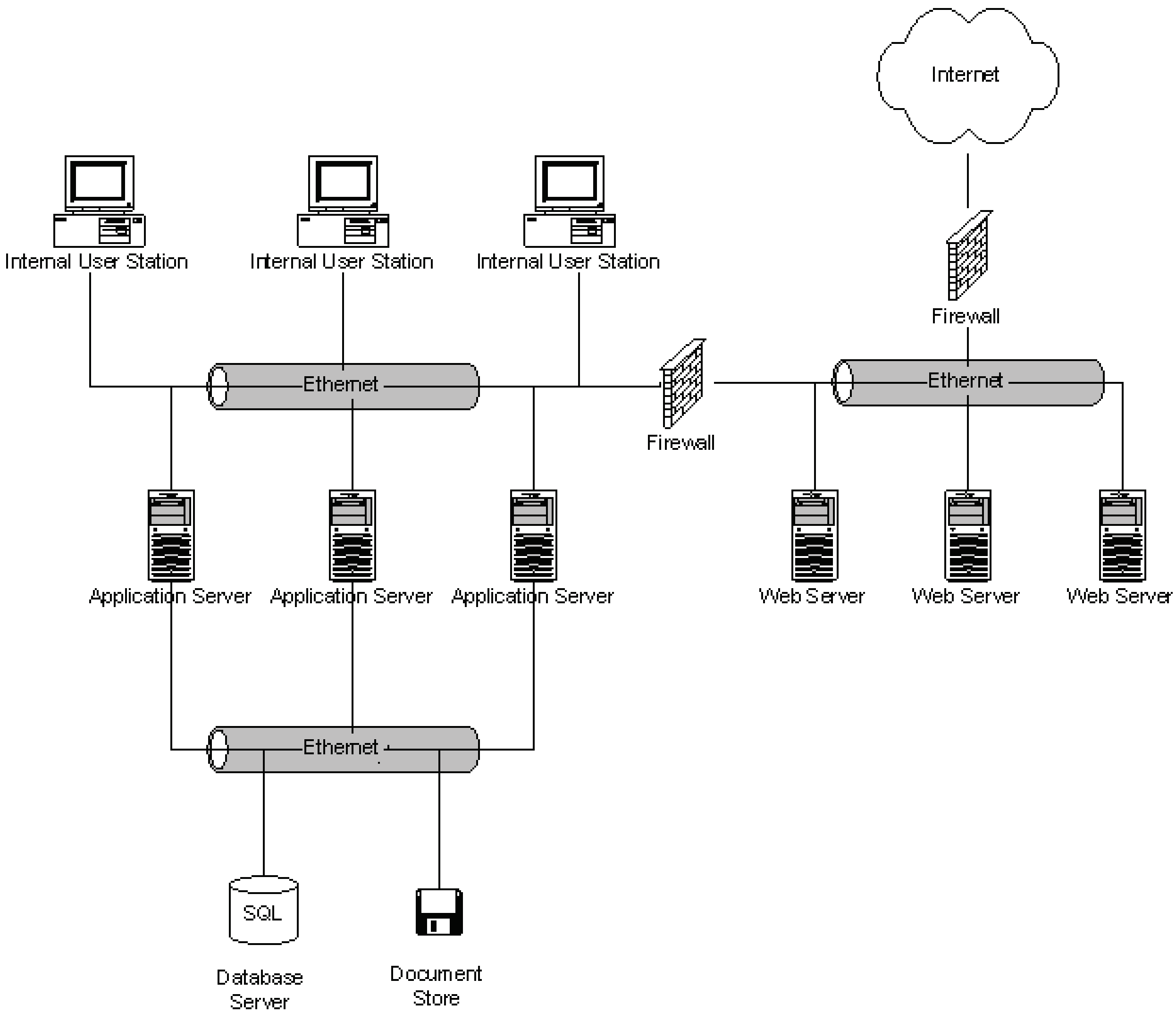


Department

We recommend that in a departmental solution, you seriously evaluate your need for Microsoft SQL Server (rather than using SQL Server 2008 R2 Express Edition) in order to meet your scalability needs. The user stations interact with the web/application server. The web/application server handles all of the necessary transactions with the database server and the document store.

Large Enterprise

PaperVision Enterprise easily scales to handle the needs of an entire enterprise.



Large Enterprise

In this example, there are internal users (on an internal network) that access either the application servers (via PaperVision Enterprise) or the web servers (via their web browsers). The web servers (assumed to be load-balanced) redirect all of their processing to the application servers (also assumed to be load balanced). The application servers are the only servers that interact directly with the database or document store. This configuration can provide unlimited scalability.

Naturally, external users (connecting via the internet) can use their web browsers to access PaperVision.net Enterprise. An interesting option is the ability for those external users to install the PaperVision Enterprise application on their computer and point their connection to the web servers. This in effect will allow a user to run the desktop application remotely without the need for a VPN. All of the communications (including transfer of documents) between the remote desktop application and the web servers is handled via http and can be secured using SSL, negating the need for VPN access.

Appendix D – Customization and Integration

In addition to a number of APIs, PaperVision Enterprise offers extensive customization and integration capabilities. Terms of use of PaperVision's APIs and source code, as well as restrictions, are specified in the PaperVision Enterprise EULA (End User License Agreement) you received with the product.

PaperVision Enterprise APIs

PaperVision includes a number of APIs designed to allow PaperVision's functionality to be extended or integrated into third-party applications. Full documentation for these APIs is provided in a separate manual, which is included with PaperVision.

Web Services

PaperVision's web service API provides the necessary functionality to integrate PaperVision's client-server communications. For instance, a developer could integrate PaperVision's document searching and retrieval capabilities into an existing web application.

COM DLLs

PaperVision's COM DLLs provide an ActiveX/COM interface to the same functionality that is available via PaperVision's web services. These interfaces support both local (the computer interacts directly with the database server and document store) and remote (the computer communicates with a PaperVision server via web services) capabilities without having to make any modifications to your code to switch between the two communication methods. In other words, you could use the COM DLLs to write an application that retrieves documents from a local document store or via a remote server (i.e. over the web).

All of the functionality contained in the PaperVision Administration Console is also available through PaperVision's COM DLLs.

ActiveX Controls (OCX)

PaperVision includes a number of OCX controls that can be embedded into any application capable of working with ActiveX OCX's. PaperVision's OCX's include a document viewing control, search criteria control, WorkFlow viewing control, and WorkFlow definition control.

Source Code

PaperVision Enterprise

PaperVision Enterprise includes full source code for the PaperVision Enterprise application (source code is not provided for PaperVision APIs). Rather than offer sample applications that only provide a glimpse into how to utilize the APIs, Digitech Systems feels it is necessary to show you how we use the APIs. This allows you to make modifications or additions to the PaperVision Enterprise application or to see "how Digitech Systems does it" so you can implement similar functionality into your own applications.

PaperVision Enterprise Web

The PaperVision Enterprise Web is comprised of a series of ASPX and ASP pages (ASP pages are kept for backwards compatibility). These provide significant insight into utilizing the PaperVision APIs in a web server application or browser-based environment.

PaperVision Enterprise Web also includes a file called "PVESearchURL.aspx" that allows for quick integration with third-party applications. This file accepts remote login requests, user credentials, project selection, search query, and determination as to what to do with the search results (view the results or view the first document) all via a URL.

> **Tip**:
>
> To redirect PVESearchURL requests to the PaperVision Authentication Gateway, insert the query parameter "searchURL=true" into the Default.ASPX URL.
>
> To view a list of optional PVESearchURL query parameters, append "/PVESearchURL.aspx?" to the end of your PaperVision URL address.

Customization

The PaperVision Enterprise application can be customized by modifying the source code to meet your needs. This provides you with the most flexibility in customization.

The PaperVision Enterprise Web application has been designed to ease the customization of its browser-based interface.

Fonts and Colors

The entire design is based around cascading style sheets. The following style sheets can be modified to change the colors, fonts, and font sizes for the entire PaperVision Enterprise Web Client.

- Support_Files\default_style.css - contains the majority of the style sheet attributes for the entire application

> **Note**:
>
> The contents of the **Support_Files\Grid.css** (that contained the style sheet attributes for pages displaying a result grid) and the **Support_Files\dndDefault.css** files are now located in the Support_Files\default_style.css style sheet.

- Support_Files\admin_style.css - contains the style sheet attributes specific to the administration pages
- Support_Files\printPreview.xsl - contains the style sheet and formatting attributes used when printing a result grid
- Javascript\dojo\dsi\themes\tundra\tundra.css – contains the style sheet and formatting of buttons, check boxes, date calendar controls, dialog boxes, etc.

Additional Customization

The application can be further customized by modifying the **App_GlobalResources/globalSettings.resx** file located in the PVEWeb directory. The XML-based globalSettings.resx file contains the following attributes:

- gblAboutName – Defines the product name to display in the About window (defaults to PaperVision® Enterprise)
- gblAllowOverrideShowEntID – Defines whether a user can override the gblLoginShowEntID setting, by setting a cookie. If set to false, users will not be able to configure whether the Entity ID is displayed (default true).
- gblAttachURL – Defines the ServerRefURL property, which is used by the PaperVision ActiveX Document Viewer controls for functions such as determining the URL presented for document grants (default of empty string"")
- gblDefaultTabSetting – Defines whether the System tab or Folders tab opens by default when users first log into the Web Client (default empty string "" indicating the System tab)

  > **Note**:
  >
  > If the user selects a different tab after initially logging into the Web Client, a cookie is set, which overrides the gblDefaultTabSetting.

- gblHideBrowserMenus – Defines the default setting that determines if the browser's menu bar, location bar, etc. should be hidden. Note that if set to true, users must change their IE security setting for the site to Medium-Low (default false).
- gblLoginInfoHTML – Defines additional text (in HTML format) that displays in the login prompt below the login button (default empty string "").
- gblLoginInfoLegendTitle – Defines the header title of the legend that contains the gblLoginInfoHTML text if the gblLoginInfoHTML value is populated (default empty string "")
- gblLoginShowEntID – Defines the default setting that determines if the Entity ID will display in the application (default false)
- gblMaintenanceMsg - Defines an HTML-formatted maintenance message that will display to all users, rather than presenting a login prompt (default empty string "")
- gblMaxUploadSize - Defines the maximum number of bytes that a file upload can contain. This setting must be smaller than IIS's MaxRequestLength parameter to be evaluated (default empty string "").
- gblResultsShowFirstDoc – Defines whether the system will display the first document in the search results automatically (default false).
- gblSecondaryTM – Defines the Secondary Trademark Information that displays on the About page (default empty string "").

- gblSiteImage – Defines an image to display in the top, left corner of the interface (default empty string ""). If none is specified, the gblSiteName value is displayed as text instead.
- gblSiteName – Defines the name of the product to display throughout the application (default PaperVision® Enterprise)
- gblSLAHTML – Defines the HTML-formatted Service Level Agreement (SLA) text that displays on the About page (default empty string "")
- gblUseCompressedJSFiles – Defines whether to reference the compressed pveCommon.js file that improves the loading speed of the pages in the Web Client (default false, so compressed files will not be referenced)

> **Note**:
>
> When this attribute is enabled, the contents of the pveCommon.js file under the PVEWeb\Javascript\ folder will be compressed.

Appendix E – Search Criteria

There are a number of occasions in using the PaperVision Enterprise Administration Console when you may be required to enter a document search or selection criteria (document security levels, WorkFlow pre-conditions, etc). This section provides guidelines for entering search criteria.

PaperVision Enterprise offers the ability to easily perform either extremely detailed or very broad searches within a project. You can perform multiple searches across multiple index fields at the same time, as well as perform limiting searches (allowing you to specify ranges of values) on dates and numbers.

General Searching Rules

PaperVision Enterprise provides flexible searching features to enable fast and accurate document retrieval. To maximize your search results, you can follow the following general searching rules:

- All numeric and date fields allow you to perform "limiting searches" to limit the results to a specific range of values. If both range limits are not filled for a particular index field, the system will search for the value that you entered.
- Index field searches are not case sensitive (e.g., a search for "smith" will find "Smith").
- PaperVision Enterprise allows you to utilize the asterisk "*" wildcard to specify any number of unknown characters. For example, searching for "T*" in a name field would locate any document that had a name beginning with the letter "T". Furthermore, searching for "*T*" would locate any document that included a letter "T" anywhere in the name. Finally, searching for "*T" would locate any document whose name ended with the letter "T".
- PaperVision Enterprise allows you to utilize the underscore "_" wildcard to specify a single unknown character. For example, searching for "S_N" would locate "SON", but it would not locate "SOON". Additionally searching for "_*" would locate any non-blank value.
- PaperVision Enterprise allows you to search for a single character within a range or list by using the bracket "[ ]" characters. For example, searching for "A[456]TEST" would locate "A4TEST, A5TEST, and A6TEST". The same result occurs from searching for "A[4-6]TEST". You can also utilize letters within the brackets to search for a range or list of letters (e.g., [a-f]).
- You can perform multiple searches within a single index field by using and "&" and/or "^" operators. To perform a search on a name field for names that begin with an "A" or "Z", you could simply enter "A*^Z*". To perform a search on a name field for names that begin with "A" and end with "P", you could enter "A*P".
- To search for a document whose index field contains an ampersand, simply use two ampersands in your search. For example, to find "Johnson & Johnson", you would search for "Johnson && Johnson".

- You can perform searches on multiple fields at once. Simply enter the search criteria into the desired fields and select the appropriate search type. "And" finds documents where all criteria have been met. "Or" finds documents where any of the criteria has been met.
- You can enter the [CURRENTDATETIME] tag as general search criteria to represent the current date and time that the search is run. This is particularly useful in situations where documents need to be identified that are of a certain age. A specified number of years (Y), months (M), days (D), hours (H), minutes (N), or seconds (S) can be added to or subtracted from the current date and time. Possible uses for the [CURRENTDATETIME] tag are as follows:

  [CURRENTDATETIME] = Current Date/Time

  [CURRENTDATETIME+1Y] = Current Date/Time plus 1 year

  [CURRENTDATETIME-12M] = Current Date/Time minus 12 months

  [CURRENTDATETIME+2D] = Current Date/Time plus 2 days

  [CURRENTDATETIME-96H] = Current Date/Time minus 96 hours

  [CURRENTDATETIME+900N] = Current Date/Time plus 900 minutes

  [CURRENTDATETIME+120S] = Current Date/Time plus 120 seconds
- During the search, PaperVision Enterprise will initially sort the results based on the selected Sort By field in ascending [+] or descending [-] order.

> **Note**:
>
> Long text fields cannot be sorted.

Appendix F – Regular Expressions

A regular expression is a pattern of text that consists of ordinary characters (for example, letters a through z) and special characters, known as metacharacters. The pattern describes one or more strings to match when searching a body of text. The regular expression serves as a template for matching a character pattern to the string being searched.

Examples:

Syntax: \d{3}-\d{2}-\d{4}
Locates: Social Security Number such as 123-12-1234

Syntax: ^\s*$
Locates: Blank lines

Syntax: ((0?[1-9])|(1[012]))[- /.](0?[1-9]|[12][0-9]|3[01])[- /.](19|20)?[0-9]{2}
Locates: Various date formats such as 12.24.97, 12/24/97, and 12-24-97

Syntax: (Sun|Mon|(T(ues|hurs))|Fri)(day|.)?|Wed(.|nesday)?|Sat(.|urday)?|
T((ue?)| (hu?r?)).?)
Locates: Days of the week in both Sunday and Sun formats

Syntax: ([0-9]{4}[-]?){4}
Locates: 16-digit credit card numbers

Syntax: SMITH.*JONES
Locates: Any occurrence of SMITH followed by JONES (with or without characters between the two names)

Additional information on regular expressions can be located at:

http://msdn.microsoft.com/library/default.asp?url=/library/en-us/script56/html/js56reconIntroductionToRegularExpressions.asp

Metacharacters

The following table contains a complete list of metacharacters and their behavior in the context of regular expressions:

Character	Description
\	Marks the next character as a special character, a literal, a back reference, or an octal escape • For example, 'n' matches the character "n". '\n' matches a newline character. • The sequence '\\' matches "\" and "\(" matches "(".
^	Matches the position at the beginning of the input string
$	Matches the position at the end of the input string
*	Matches the preceding character or subexpression zero or more times For example, zo* matches "z" and "zoo". * is equivalent to {0,}.
+	Matches the preceding character or subexpression one or more times For example, 'zo+' matches "zo" and "zoo", but not "z". + is equivalent to {1,}.
?	Matches the preceding character or subexpression zero or one time For example, "do(es)?" matches the "do" in "do" or "does". ? is equivalent to {0,1}
{*n*}	*n* is a nonnegative integer; matches exactly *n* times For example, 'o{2}' does not match the 'o' in "Bob", but matches the two o's in "food".
{*n*,}	*n* is a nonnegative integer; matches at least *n* times For example, 'o{2,}' does not match the "o" in "Bob" and matches all the o's in "foooood". 'o{1,}' is equivalent to 'o+'. 'o{0,}' is equivalent to 'o*'.
{*n*,*m*}	*m* and *n* are nonnegative integers, where *n* <= *m*; matches at least *n* and at most *m* times. For example, "o{1,3}" matches the first three o's in "fooooood". 'o{0,1}' is equivalent to 'o?'. **Note**: Do not place a space between the comma and the numbers.

<table>
<tr><th>Character</th><th>Description</th></tr>
<tr><td>?</td><td>When this character immediately follows any of the other quantifiers (*, +, ?, {*n*}, {*n*,}, {*n*,*m*}), the matching pattern is non-greedy. A non-greedy pattern matches as little of the searched string as possible, whereas the default greedy pattern matches as much of the searched string as possible.

For example, in the string "oooo", 'o+?' matches a single "o", while 'o+' matches all 'o's.</td></tr>
<tr><td>.</td><td>Matches any single character except "\n"

To match any character including the '\n', use a pattern such as '[\s\S].</td></tr>
<tr><td>(*pattern*)</td><td>Matches pattern

Note: To match parentheses characters ( ), use '\(' or '\)'.</td></tr>
<tr><td>(?:*pattern*)</td><td>Matches *pattern* but does not capture the match. This is useful for combining parts of a pattern with the "or" character (|).

For example, 'industr(?:y|ies) is a more economical expression than 'industry|industries'.</td></tr>
<tr><td>(?=*pattern*)</td><td>Positive lookahead matches the search string at any point where a string matching *pattern* begins.

For example, 'Windows (?=95|98|NT|2000)' matches "Windows" in "Windows 2000" but not "Windows" in "Windows 3.1".

Lookaheads do not consume characters (i.e., after a match occurs, the search for the next match begins immediately following the last match, not after the characters that comprised the lookahead).</td></tr>
<tr><td>(?!*pattern*)</td><td>Negative lookahead matches the search string at any point where a string not matching *pattern* begins. For example 'Windows (?!95|98|NT|2000)' matches "Windows" in "Windows 3.1" but does not match "Windows" in "Windows 2000". Lookaheads do not consume characters, that is, after a match occurs, the search for the next match begins immediately following the last match, not after the characters that comprised the lookahead.</td></tr>
<tr><td>*x*|*y*</td><td>Matches either *x* or *y*

For example, 'z|food' matches "z" or "food". '(z|f)ood' matches "zood" or "food".</td></tr>
</table>

Character	Description
[*xyz*]	A character set; matches any one of the enclosed characters. For example, '[abc]' matches the 'a' in "plain".
[^*xyz*]	A negative character set; matches any character not enclosed For example, '[^abc]' matches the 'p' in "plain".
[*a-z*]	A range of characters; matches any character in the specified range For example, '[a-z]' matches any lowercase alphabetic character in the range 'a' through 'z'.
[^*a-z*]	A negative range characters; matches any character not in the specified range For example, '[^a-z]' matches any character not in the range 'a' through 'z'.
\b	Matches a word boundary, that is, the position between a word and a space. For example, 'er\b' matches the 'er' in "never" but not the 'er' in "verb".
\B	Matches a nonword boundary. 'er\B' matches the 'er' in "verb" but not the 'er' in "never".
\c*x*	Matches the control character indicated by x. For example, \cM matches a Control-M or carriage return character. The value of x must be in the range of A-Z or a-z. If not, c is assumed to be a literal 'c' character.
\d	Matches a digit character. Equivalent to [0-9].
\D	Matches a nondigit character. Equivalent to [^0-9].
\f	Matches a form-feed character. Equivalent to \x0c and \cL.
\n	Matches a newline character. Equivalent to \x0a and \cJ.
\r	Matches a carriage return character. Equivalent to \x0d and \cM.
\s	Matches any white space character including space, tab, form-feed, and so on. Equivalent to [\f\n\r\t\v].
\S	Matches any non-white space character. Equivalent to [^ \f\n\r\t\v].
\t	Matches a tab character. Equivalent to \x09 and \cI.
\v	Matches a vertical tab character. Equivalent to \x0b and \cK.
\w	Matches any word character including underscore. Equivalent to '[A-Za-z0-9_]'.

Character	Description
\W	Matches any nonword character. Equivalent to '[^A-Za-z0-9_]'.
\x*n*	Matches n, where n is a hexadecimal escape value. Hexadecimal escape values must be exactly two digits long. For example, '\x41' matches "A". '\x041' is equivalent to '\x04' & "1". Allows ASCII codes to be used in regular expressions.
num	Matches num, where num is a positive integer. A reference back to captured matches. For example, '(.)\1' matches two consecutive identical characters.
n	Identifies either an octal escape value or a backreference. If \n is preceded by at least n captured subexpressions, n is a backreference. Otherwise, n is an octal escape value if n is an octal digit (0-7).
nm	Identifies either an octal escape value or a backreference. If \nm is preceded by at least nm captured subexpressions, nm is a backreference. If \nm is preceded by at least n captures, n is a backreference followed by literal m. If neither of the preceding conditions exist, \nm matches octal escape value nm when n and m are octal digits (0-7).
nml	Matches octal escape value nml when n is an octal digit (0-3) and m and l are octal digits (0-7).
\u*n*	Matches n, where n is a Unicode character expressed as four hexadecimal digits. For example, \u00A9 matches the copyright symbol (©).

Appendix G – Frequently Asked Questions

This section provides supplemental information on certain features of PaperVision Enterprise.

Q: When are idle user sessions killed (logged out) from PaperVision Enterprise and PaperVision.net Enterprise?

A: PaperVision includes two mechanisms to enforce the **Max Session Idle Time** configured in the System Settings**:**

- If the Session/Grant Cleanup (as defined in the System Settings) is enabled, the PaperVision Automation Service will automatically remove old sessions.
- Whenever a user logs into PaperVision Enterprise, all user sessions that have been idle too long are killed (logged out).

Q: When the PaperVision Automation Service automatically imports data groups, how does it know which entity to import the data group into?

A: When an administrator manually imports a data group, a data group mapping is created. This mapping looks at the data group's customer/company ID value and the data group's customer/company name value. It then checks to see if any data groups with the same information have been previously "mapped" to the current entity. If not, it maps this ID/name pair to the entity it is being imported into.

When the automation service imports the data group, it looks at the same ID/name pair and looks for a mapping to an entity. If one is found, it continues loading the data group. Otherwise, it will send a notification to the administrators to alert them that the data group has not been mapped.

Q: What document file formats are supported for native viewing within the PaperVision ActiveX Document Viewer, without requiring any additional software?

A: The following file formats are supported for native viewing:

Archive File Formats

- 7-Zip version 4.57
- BinHex
- Bzip2
- Expert Witness Compression (EnCase)
- GZIP version 2
- ISO
- Java Archive
- Legato EMailXtender Archive

- Mac Disk Copy Disk Image
- MacBinary
- Microsoft Backup File
- Microsoft Cabinet format version 1.3
- PKZIP versions through 9.0
- Tape Archive
- UNIX Compress
- UUEncoding all versions
- WinZip versions through 10

> **Note**:
>
> You can extract files from password protected .RAR and 7-Zip files. In addition, the ZIP reader supports LZMA, BZIP2, and Deflate64 compression methods.

Binary Formats

- Executable
- Link Library

Computer-Aided Design Formats

- AutoCAD drawing (DWF, DWG, and DXF files) versions 2.5 through 2009
- Microsoft Visio versions 5, 2000, 2002, 2003, 2007, 2010

> **Note**:
>
> Graphic rendering for AutoCAD Drawing R13, R14, and R15 files is supported.

Database Formats

- dBase III+ and IV
- Microsoft Access versions 95, 97, 2000, 2002, 2003
- Microsoft Project 2000, 2002, 2003, 2007

Graphic Formats

- Computer Graphics Metafile
- CorelDRAW versions through 9.0

- DCX Fax System
- EMF
- Encapsulated Postscript (raster) – TIFF header
- Enhanced Metafile
- GIF versions 87 and 89
- HD Photo (JPEG XR) with .HDP or .WDP extensions
- JBIG2
- JPEG
- JPEG LS with .JLS extension
- JPEG2000 (includes .J2K, .JP2, and .JPX)
- Lossless JPEG with .LJP extension
- Lotus AMIDraw Graphics
- Lotus Pic
- Macintosh Raster version 2
- MacPaint
- Microsoft Office Drawing
- PC PaintBrush version 3
- Portable Network Graphics (PNG)
- RAW
- SGI RGB Image
- Sun Raster Image
- Tagged Image File (TIFF) versions through 6.0
- Truevision Targa version 2
- WBMP
- Windows Animated Cursor
- Windows Bitmap
- Windows Icon Cursor
- Windows Metafile version 3
- WordPerfect Graphics 1 version 1
- WordPerfect Graphics 2 version 2 and 7
- WSQ

Note:

Graphic rendering for AutoCAD Drawing R13, R14, and R15 files is supported.

Mail Formats

- Documentum EMCMF
- Domino XML Language (includes support for non-encrypted embedded files and embedded images in DXL files)
- Legato Extender
- Lotus Notes Database versions 4, 5, 6.0, 6.5, 7.0, 8.0
- Mailbox (MBX) created by Eudora 6.2 and Thunderbird 1.0
- Microsoft Entourage Database 2004
- Microsoft Outlook DBX 5.0 and 6.0
- Microsoft Outlook Express (EML) versions 5 (Mac) and 6 (Windows)
- Microsoft Outlook Message (MSG) versions 97, 2000, 2002, 2003, 2007
- Text Mail (MIME)
- Transport Neutral Encapsulation Format

Multimedia Formats

Note:

Multimedia files are played using the Windows Media Control Interface.

- Audio Interchange File Format (AIFF)
- Microsoft Wave Sound (WAV)
- MIDI
- MPEG-1 Audio layer 3 versions ID3 v1 and v2
- MPEG-1 Video version 2 and 3
- MPEG-2 Audio
- NeXT/Sun Audio
- QuickTime Movie version 2, 3, 4
- Windows Video (AVI) version 2.1

PDF Formats

- Adobe PDF versions through1.1 - 1.7 (includes password-protected PDF files)

Presentation Formats

- Apple iWork Keynote versions 2, 3, '08, and '09
- Applix Presents versions 4.0, 4.2, 4.3, 4.4
- Corel Presentations versions 6, 7, 8, 9, 10, 11, 12, X3
- Extensible Formats Description Language (XFD, XFDL)
- IBM Lotus Symphony Presentation 3.0
- Lotus Freelance Graphics 2
- Lotus Freelance Graphics versions 96, 97, 98, R9, 9.8
- Macromedia Flash versions through 8.0
- Microsoft PowerPoint Macintosh versions 98, 2001, v.X, 2004
- Microsoft PowerPoint PC version 4
- Microsoft PowerPoint Windows versions 95, 97, 2000, 2002, 2003
- Microsoft PowerPoint Windows XML versions 2007, 2010

> **Note**:
> Transparent shapes in Microsoft PowerPoint files are also supported.

- OASIS Open Document Format versions 1 and 2
- OpenOffice Impress versions 1, 1.1, 2.0
- StarOffice Impress versions 6, 7, 8

Spreadsheet Formats

- Apple iWork Numbers versions '08 and '09
- Applix Spreadsheets versions 4.2, 4.3, 4.4
- Comma Separated Values (CSV)
- Corel Quattro Pro versions 5, 6, 7, 8
- Data Interchange Format
- IBM Lotus Symphony Spreadsheet 3.0
- Lotus 1-2-3 Charts versions 2, 3, 4, 5
- Lotus 1-2-3 versions 2, 3, 4, 5, 96, 97, R9, 9.8
- Microsoft Excel Charts versions 2, 3, 4, 5, 6, 7
- Microsoft Excel Macintosh versions 98, 2001, v.X, 2004
- Microsoft Excel Windows versions 2.2 through 2007

- Microsoft Excel Windows XML version 2007, 2010
- Microsoft Office Excel Binary Format versions 2007, 2010

> **Note**:
>
> Merged cells and those containing Unicode text in Microsoft Excel files are supported. In addition, charts, cell color, and border formatting in Microsoft Excel 2007 spreadsheets are also supported.

- Microsoft Works Spreadsheet versions 2, 3, 4
- OASIS Open Document Format versions 1, 2
- OpenOffice Calc versions 1, 1.1, 2.0
- StarOffice Calc versions 6, 7, 8

Text and Markup Formats

- ANSI
- ASCII
- HTML versions 3, 4

> **Note**:
>
> Character set detection is supported for HTML files.

- Microsoft Excel Windows XML version 2003
- Microsoft Visio XML version 2003
- Microsoft Word Windows XML version 2003
- MIME HTML (.mht)
- Rich Text Format versions 1 through 1.7
- Unicode HTML
- Unicode Text versions 3, 4
- XHTML version 1.0
- XML (generic) version 1.0

Word Processing Formats

- Adobe FrameMaker Interchange Format versions 5, 5.5, 6, 7
- Apple iChat Log versions 1, AV 2, AV 2.1, and AV 3
- Apple iWork Pages versions '08 and '09
- Applix Words versions 3.11, 4, 4.1, 4.2, 4.3, 4.4

- Corel WordPerfect Linux versions 6.0, 8.1
- Corel WordPerfect Macintosh versions 1.02, 2, 2.1, 2.2, 3, 3.1
- Corel WordPerfect Windows versions 5, 5.1, 6, 7, 8, 9, 10, 11, 12, X3
- DisplayWrite version 4
- Folio Flat File version 3.1
- Fujitsu Oasys version 7
- Health Level7 version 2.0
- IBM DCA/RFT version SC23-0758-1
- IBM Lotus Symphony Documents 3.0
- JustSystems Ichitaro versions 8 through 2010
- Lotus AMI Pro versions 2, 3

Word Processing Formats (continued)

- Lotus AMI Professional Write Plus version 2.1
- Lotus SmartMaster versions 96, 97
- Lotus Word Pro versions 96, 97, R9
- Microsoft Windows Write versions 1, 2, 3
- Microsoft Word Macintosh versions 4, 5, 6, 98, 2001, v.X, 2004
- Microsoft Word PC versions 4, 5, 5.5, 6
- Microsoft Word Windows versions 1.0, 2.0, 6, 7, 8, 95, 97, 2000, 2003
- Microsoft Word Windows XML versions 2007, 2010

> **Note**:
> WordArt text in Microsoft Word 2007 is supported.

- Microsoft Works versions 1, 2, 3, 4, 6, 2000
- Oasis Open Document Format versions 1, 2
- OmniOutliner versions v3, OPML, and OOutline
- OpenOffice Writer versions 1, 1.1, 2.0
- OpenPublication Structure eBook version 2.0
- Skype Log version 3
- StarOffice Writer versions 6, 7, 8
- WordPad versions through 2003
- XML Paper Specification
- XyWrite version 4.12

- Yahoo! Instant Messenger

Miscellaneous Supported Files and Items

- OpenOffice 3 tables in presentation (.ODP) files
- Quantum compression format when extracting .CAB files
- Self-extracting archives created with WinZip, WinRar, and AllZip
- Timestamps are preserved when files are extracted; however, there is no correction for Daylight Savings Time.

Q: What document file formats are supported for native viewing within the Browser-Based Viewer, without requiring any additional software?

A: The following file formats are supported for native viewing:

COLD/ERM Formats

- COLD documents (DataFlow textual documents and PVERM COLD documents)

Image Formats

- BMP (Standard Windows format, including OS/2, bitmap)
- CGM (Computer Graphics Metafile)
- CLP (Windows Clipboard)
- CUR (Windows 3.x and Win95 cursor)
- CUT/PAL (Dr. Halo CUT)
- DCRAW/RAW (Digital Camera Raw)
- DCX (Intel multi-page FAX)
- DIB (Microsoft Device Independent Bitmap)
- DICOM/DICM/DCM (Digital Imaging & Communication in Medicine versions 3.0, 1991-2006)
- GEM (GEM Paint)
- GIF (Graphic Image Format)
- WDP (HD Photo/Windows Media Photo)
- ICA/MOD (IBM IOCA and MO:DCA)
- ICO (Windows Icon)
- IFF (Electronic Arts)
- IMT (IMNET Groups III and IV)

- J2C (JPEG2000)
- JFX (Kofax Group4)
- JP2/JPC/J2K
- JPG/JPEG (JPEG)
- JPX (JPEG2000 Extensions)
- LV (Lazer View)
- MSP (MS Paint)
- NCR (NCR)
- PBM (Portable Bitmap)
- PCD (Kodak Photo CD)
- PCX (PC Paintbrush)
- PGM (Portable Graymap)
- PNG (Portable Network Graphics)
- PNM (Portable Any-Map)
- PPM (Portable Pixmap)
- PSB (Adobe Photoshop Big)
- PSD (Adobe Photoshop)
- PTOCA/PTO/MOD (Presentation Text Object Content Architecture)
- RAS (Sun Raster Data)
- SGI (Silicon Graphics Image)
- TGA (Truevision Targa)
- TIF/TIFF (Tagged Image File Format version 3.0-6.0)
- U3D (Universal 3D version 1.0)
- WBMP (Wireless Bit-Map)
- WPG (WordPerfect Graphics Metafile)
- XBM (X BitMap)
- XPM (X PixMap)
- XWD/WD (XZ Windows Dump)

Informational Formats

- CAR

PDF/Postscript Formats

- PDF (Adobe PDF version 1.1-1.7)
- PS/EPS (Adobe PS v3)

Message Formats

- EML
- MSG

Microsoft Visio Files

- VDX
- VSD
- VSS
- VST
- VSX
- VTX
- VZW

Multi-Part Files

- GZIP
- TAR
- ZIP

Non-Converted Files

- HTML
- TXT
- XHTML

Presentation Formats

- ODP
- PPT
- PPTX

- XLSB
- XML

Spreadsheet Formats

- CSV
- FODS
- ODS
- XLS
- XLSM
- XLSX
- XLTX
- XML

Textual Formats

- DOC
- DOCX
- MHT/MHTML
- ODT
- RTF
- XML

Q: What document file formats are supported by PaperVision's full-text database engine?

A: In addition to PaperFlow data groups (that have been processed with OCRFlow) and DataFlow data groups, PaperVision can extract full-text information from the following document file formats:

- Adobe Acrobat – pdf
- Adobe Flash – SWF
- Ami Pro – sam
- ANSI/ASCII text – txt
- EBCDIC
- Eudora MBX message files – mbx
- GZIP – gz

- HTML – htm, html
- JPEG – jpg
- Lotus 123
- MBOX email archives (including Thunderbird) – mbx
- MHT archives (HTML archives saved by Internet Explorer) – mht
- MIME messages
- Microsoft Access 95 through 2007 – MDB
- Microsoft Excel – xls/xlsx
- Microsoft Internet Explorer Archives - mht
- Microsoft Excel 2003 XML – xml
- Microsoft Outlook Email files – eml
- Microsoft Outlook Express 5 and 6 message stores – dbx
- Microsoft Outlook Message files - msg
- Microsoft PowerPoint – ppt/pptx
- Microsoft Rich Text Format – rtf
- Microsoft Vista XML Paper Specification - xps
- Microsoft Word for DOS – doc
- Microsoft Word for Windows versions 1, 2, 6, 7, 8 (Word 97), 9 (Word 2000), 10 (Word XP), 11 (Word 2003), 12 (Word 2007) – doc/docx
- Microsoft Word 2003 XML – xml
- Microsoft Works – wks
- MP3 (metadata only) – mp3
- Multimate Advantage II – dox
- Multimate version 4 – doc
- OpenOffice 2.x and 1.x documents, spreadsheets, and presentations – sxc, sxd, sxi, sxw, sxg, stc, sti, stw, odt, ott, odg, otg, odp, otp, ods, ots, odf (includes OASIS Open Document Format for Office Applications)
- Quattro Pro
- TAR – tar
- TIFF – tif
- Transport Neutral Encapsulation Format – tnef
- Treepad – hjt

- Unicode (UCS16, Max or Windows byte order, or UTF-8)
- WMA media files (metadata only) – wma
- WMV video files (metadata only) – wmv
- WordPerfect versions 5 and later – wpd, wpf
- WordStar versions 4, 5, 6 – ws
- Write – wri
- XBase (including FoxPro, dBase, etc.) – dbf
- XML – xml
- XSL – xsl
- ZIP – zip

Q: To better understand the Maximum Results per Query and Document Grouping user settings, explain how PaperVision Enterprise searches for documents (including and excluding full-text search criteria).

A: PaperVision Enterprise searches for documents (excluding full-text search criteria) by following the steps below:

1. PaperVision Enterprise executes the submitted index value query against the SQL database, limiting the results to the value specified by *Maximum Results per Query* and sorting by the Document ID value.
2. For each document returned from that database query, PaperVision checks to ensure the requesting user has document level access to it.
3. If, after stripping out documents, there are fewer than *Maximum Results per Query*, PaperVision Enterprise will repeat steps 1 and 2 for the next group of documents. When the correct number of documents are found (or no more meet the criteria), PaperVision Enterprise will continue to step 4.
4. PaperVision Enterprise sorts the final set of documents based on the user's requested sort order and field.
5. PaperVision Enterprise cycles through the documents, queuing them up to be returned to the client. As it does this, if the user has document grouping enabled, PaperVision Enterprise will compare document index values to see if any document groups should be created.

PaperVision Enterprise searches for documents (including full-text search criteria) by following the steps below:

1. PaperVision Enterprise submits the full-text search criteria to the full-text database engine, instructing it to return, at most, the number of documents specified by Maximum Full-Text Items configured by the system administrator. The engine returns the Document ID values (and additional information) of any documents that the full-text engine finds.
2. PaperVision Enterprise appends the submitted index value query (if any) to also require the resulting documents to have Document ID values that are in the list of those found by the full-text engine.
3. PaperVision Enterprise executes the submitted index value query against the SQL database, limiting the results to the value specified by Maximum Results per Query and sorting by the Document ID value.
4. For each document returned from that database query, PaperVision Enterprise checks to ensure the requesting user has document level access to it.
5. If, after stripping out documents, there are fewer than the specified Maximum Results per Query, PaperVision Enterprise will repeat steps 3 and 4 for the next group of documents. When the correct number of documents are found (or no more meet the criteria), PaperVision Enterprise will continue to step 6.
6. PaperVision Enterprise sorts the final set of documents based on the user's requested sort order and field.

7. PaperVision Enterprise cycles through the documents, queuing them up to be returned to the client. Since a full-text search was issued, no document grouping is used.

Q: How does PaperVision's file caching scheme work?

A: PaperVision Enterprise searches for documents (excluding full-text search criteria) by following the steps below:

PaperVision Enterprise implements advanced caching processes to minimize the chance of an unauthorized party accessing a document. When using an application server in your PaperVision Enterprise installation, the document store is never exposed to outside users, nor is it exposed to the PaperVision Enterprise users.

The following caching process takes place when a user retrieves a document:

1. The PaperVision Enterprise server caches the first page of that document to a temporary location and then passes that information to the PaperVision Enterprise document viewer.
2. The PaperVision Enterprise document viewer retrieves the file from the temporary location on the server and stores it in a temporary location on the client machine.
3. The PaperVision Enterprise document viewer notifies the PaperVision Enterprise server that the cached file can be removed.
4. The PaperVision Enterprise server removes the cached file.
5. Steps 1 through 4 are repeated for any additional documents or pages.
6. When the PaperVision Enterprise document viewer is closed, it clears out the cached files on the local machine.

Q: What is the "PVESystemHealth.ASPX" page that gets installed when I install PaperVision.net Enterprise?

A: The PVESystemHealth.ASPX page is designed to verify the following information:

- The web server itself is working correctly and properly executing ASPX scripts (always on).
- The primary system database is accessible by the web/application server (CheckType=1).
- All of the databases for all of the entities are writable by the web/application server (CheckType=2).
- A user-defined list of document stores is accessible by the server (CheckType=4).

When accessing the PVESystemHealth.ASPX, you can pass the CheckType value to specify which checks you wish to perform. If no CheckType value is passed, all checks are performed. The CheckType value can contain multiple checks by using a binary-or operation (i.e. PVESystemHealth.ASPX?CheckType=7 performs all checks).

To define the list of document stores (directories), create a file called CHECK.DIR in the **C:\Program Files\Digitech Systems\Common Files** directory. Enter the full path to the directory that you want to verify (one path per line). Below is a sample CHECK.DIR file:

\\storage1\pvdmstore\
\\storage2\pvdmstore\
Z:\document storage directory

Q: How can I ensure the Add New Documents and Scan New operations are available for use in the PVESearchURL.aspx page, even when no results are returned by the original query?

A: To ensure these operations are available for use when you execute searches via PVESearchURL.aspx, the "ResultsType=List" parameter must be included in your URL. If the "ResultsType=Docs" parameter is used, the Add New Documents and Scan New operations will not be available if no results are returned.

Q: Is there any way to disable the use of the Browser-Based Viewer option for my users and force them to continue to use the ActiveX plugin?

A: With the PaperVision Enterprise R75 release, the Document Display Method has been changed to allow users to view documents using the Browser-Based Viewer (instead of having to install the ActiveX browser plugin). Follow the steps below to disable the Browser-Based Viewer option for your users:

1. Browse to the location where PVE was installed (e.g. c:\Program Files (x86)\Digitech Systems\PaperVision\PVEWeb).
2. Highlight **web.config**, right-click and choose **Properties**.
3. Disable the "Read-only" attribute for this file and save the change.
4. Edit the **web.config** file in Notepad.
5. Browse to the <appSettings> section (located near the end of the file), and change the line that currently reads "<add key="disableBBV" value="false" />" to "<add key="disableBBV" value="true" />".
6. Save the file. This disables the use of the Browser-Based Viewer for all users accessing your web site.

If the **disableBBV** option is enabled (set to "True"), the Security Policy (General Security > Security Policy) displays 1 additional option on the "General" tab: Require web clients to use the browser plugin. By default, this option is automatically enabled which forces all users to use the ActiveX browser plugin regardless of which option they choose (User Options > System Settings > Document Viewing tab); "Use Browser-Based Viewer" or "Use PaperVision ActiveX Viewer".

If the **disableBBV** option is enabled (set to "True"), but the administrator disables the Security Policy option (Require web clients to use the browser plugin), any user who enables the "Use Browser-Based Viewer" option in User Options will automatically view

all documents in their respective application (e.g. ".doc" files will prompt to open in Microsoft Word).

If the **disableBBV** option is left disabled (set to "False" – default setting), the Security Policy does not display the option "Require web clients to use the browser plugin", and users can choose to view documents in either the Browser-Based Viewer, or the PaperVision ActiveX Viewer.

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